

**FILED**

**FEB 22 2010**

**SECRETARY, BOARD OF  
OIL, GAS & MINING**

**BEFORE THE BOARD OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH**

IN THE MATTER OF THE REQUEST FOR AGENCY ACTION OF ANADARKO PETROLEUM CORPORATION FOR AN ORDER MODIFYING THE BOARD'S ORDER IN CAUSE NO. 241-1 TO ALLOW AN ADDITIONAL (SECOND) WELL IN EACH OF THE 160-ACRE (OR SUBSTANTIALLY EQUIVALENT) DRILLING UNITS FOR THE PRODUCTION OF GAS (INCLUDING COALBED METHANE) FROM THE FERRON FORMATION IN SECTIONS 32 AND 36, TOWNSHIP 13 SOUTH, RANGE 10 EAST, SLM, AND SECTIONS 2 THROUGH 4, TOWNSHIP 14 SOUTH, RANGE 10 EAST, SLM, CARBON COUNTY, UTAH

**PETITIONER'S EXHIBITS**

Docket No. 2010-012

Cause No. 241-01A

Pursuant to Utah Admin. Code Rule R641-105-500, Petitioner Anadarko Petroleum Corporation ("Anadarko"), by and through its counsel of record, Beatty & Wozniak, P.C., hereby respectfully submits the following exhibits intended to be offered into evidence in support of its Request for Agency Action ("RAA") at the March 24, 2010 hearing on this cause:

**EXHIBIT "A"** – Anadarko's witnesses' resumes – (collectively 4 pages):

- Patrick G. McGraw – Landman
- Will Monn – Geologist
- Bennie J. Allen – Petroleum Engineer

**EXHIBIT "B"** – True and correct copy of the Board's Order entered in Cause No. 241-1 – (8 pages);

**EXHIBIT "C"** – Regional Overview Plat – (1 page).

- EXHIBIT “D”** – Leasehold Plat and Production Interest Ownership Summary – (collectively 3 pages).
- EXHIBIT “E”** – Well Location and Spacing Status Plat – (1 page).
- EXHIBIT “F”** – True and correct copies of return receipts indicating, as of February 22, 2010, receipt of a copy of the RAA by parties identified in the Certificate of Mailing dated February 10, 2010 on file in this cause (to be supplemented prior to hearing) (collectively 2 pages).
- EXHIBIT “G”** – Ferron Gross Coal Isopach of Helper Field – (1 page).
- EXHIBIT “H”** – Ferron Stratigraphic Cross Section – (1 page).
- EXHIBIT “I”** – Ferron Net Sand Isopach of Helper Field – (1 page).
- EXHIBIT “J”** – Gas-In-Place and Drainage Area Calculations – (1 page).
- EXHIBIT “K”** – Gas Content vs. Sample Density Plot – (1 page).
- EXHIBIT “L”** – Top of Ferron Structure Map – (1 page).
- EXHIBIT “M”** – Communicating Well Plat – (1 page).
- EXHIBIT “N”** – Helper Well Drainage Plat – (1 page).
- EXHIBIT “O”** – Helper Potential In-Fill Location Plat – (1 page).
- EXHIBIT “P”** – Decline Curves for Existing 20 Wells – (collectively 20 pages).
- EXHIBIT “Q”** – Helper In-Fill Type Well Production Forecast – (1 page).
- EXHIBIT “R”** – Helper In-Fill Economic Analyses – (collectively 2 pages).

Respectfully submitted this 22<sup>nd</sup> day of February, 2010.

**BEATTY & WOZNIAK, P.C.**

By: 

Frederick M. MacDonald

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Attorneys for Petitioner Anadarko Petroleum  
Corporation

5508.77  
145160

Patrick G. McGraw  
1099 18<sup>th</sup> Street  
Denver, CO 80202  
(720) 929-6178  
[Patrick.McGraw@Anadarko.com](mailto:Patrick.McGraw@Anadarko.com)

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## **EDUCATION**

### **University of Colorado, Denver**

*Masters Candidate in the Graduate School of Business*

**Denver, CO**

*May, 2011*

### **Colorado State University**

*Bachelor of Arts in History,*  
with an emphasis on Communications

**Fort Collins, CO**

*December, 2004*

## **WORK EXPERIENCE**

### **Anadarko Petroleum Corporation**

*Landman*

**Denver, CO**

*January 2008 – Present*

Manage company leasehold and related assets in Wyoming (Powder River and Green River Basins) and Utah (Uintah Basin).

- Negotiate oil & gas leases, leasehold acquisitions, and operating agreements on behalf of Anadarko.
- Maintain and ensure all contractual obligations are met with regard to company leases, federal units, and operating agreements
- Act as a point of contact for partners and various regulatory agencies in the above listed areas
  - Prepared documentation for, and testified on various matters before the Wyoming Oil and Gas Conservation Commission

### **Strata Oil & Gas Company, LLC**

*Independent Petroleum Landman*

**Denver, CO**

*May 2005 – Dec 2008*

Conducted negotiation and research operations related to oil and gas leasing and exploration in numerous counties across Colorado and Wyoming.

- Completed due diligence projects for client acquisitions
- Negotiated and prepared oil and gas leases and surface-use agreements for mineral and surface owners
- Performed cursory and curative title searches

## **Professional Organizations**

- Denver Association of Professional Landmen (DAPL) *2006-Present*
- American Association of Professional Landmen (AAPL) *2008-Present*
- Wyoming Association of Professional Landmen (WAPL) *2008-Present*

<p><b>Docket No. 2010-012</b> <b>Cause No. 245-01A</b> <b>Exhibit "A"</b></p>
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# Will Monn

12646 Jersey Circle East  
Thornton, CO 80602

Work: (720) 929-6711  
Cell: (801) 376-8631  
[will.monn@anadarko.com](mailto:will.monn@anadarko.com)

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## EDUCATION

- **Master of Science Geology**  
Brigham Young University     *April 2006*  
Thesis Work: "*A Multidisciplinary Approach to Reservoir Characterization of the Coastal Entrada Erg-Margin Gas Play, Utah*"  
GPA: 4.0/4.0
- **Bachelor of Science Geology**  
Brigham Young University     *April 2004*  
Graduated Magna Cum Laude, GPA: 3.95/4.0

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## WORK EXPERIENCE

- **Anadarko Petroleum Corporation**  
**Geologist; May 2006-Present**  
*Uinta Basin (Ferron Sandstone, Mancos Shale)*  
2009/2010 – Responsible for the development and internal studies of the Helper, Cardinal Draw, and Clawson Springs fields – Studies include detailed correlation and mapping of Ferron Sandstones and coals; Aiding in petrophysical analysis of well logs and calculation of reliable Sw values; Gas-In-Place calculations of the Ferron coals, carbonaceous shales, and sandstones  
*Greater Green River Basin (Ft. Union, Lance, Fox Hills, Lewis, and Almond Formations)*  
2008/2009 – Responsible for evaluating and dealing with partner projects and farmouts, as well as initiating and completing internal studies for the Wamsutter field – Studies included reservoir evaluation and mapping of the Lewis Shale; Field-wide production log evaluations in effort to identify and map out high water and high gas producing intervals; Evaluation of depositional facies (and associated intervals) and their relationships to areas of high gas productivity  
2007/2008 – Operations work for the Wamsutter field – Directed activity of 1 to 2 rigs by providing drilling locations and maintaining contact with mudloggers and rig hands to make sure rig was on target – Completed analysis of triple combo log suites to identify completion intervals and aide engineers in fracture design – Mapped and developed targets for salt water disposal wells in the Fox Hills Sandstone and Lance Formation  
2006/2007 – Reservoir characterization work for the Almond Formation including well log normalizations, correlation work, and detailed mapping of coastal plain, deltaic, and transgressive barrier island bar deposits
- **Chevron**  
**Geologist Intern; September 2005-December 2005**  
*Anadarko Basin (Granite Wash)*  
2005 – Project work included correlating and mapping productive gas zones of the Granite Wash (a thick series of stacked, alluvial fans and fan deltas) using well log data

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## PROFESSIONAL ORGANIZATIONS

- Member of the American Association of Petroleum Geologists
- Member of the Rocky Mountain Association of Geologists

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## HONORS & AWARDS

- Anadarko Petroleum 2008 Innovator Award
- BYU Outstanding 2nd, 3rd, and 4th Year Geology Student

<b>Docket No. 2010-012</b> <b>Cause No. 245-01A</b> <b>Exhibit "A"</b>
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**BENNIE J. ALLEN**  
7438 Danks Dr.  
Evergreen, CO 80439  
(303) 656-8434  
[bennie.allen@anadarko.com](mailto:bennie.allen@anadarko.com)

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## **SUMMARY OF QUALIFICATIONS**

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Five years of experience in the oil and gas industry. The first four years have been spent in completions and operations engineering. Considered "the expert" within Anadarko in plunger lift technology and applications. Recently moved into a reservoir engineering role. Named a "team-lead" after just 5 months in reservoir engineering role.

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## **PROFESSIONAL EXPERIENCE**

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### **Anadarko Petroleum Corporation**

Denver, CO

#### *Reservoir Engineer II – Rockies CBM*

10/2009 –

present

Prepare development plans for asset for each year. Perform decline curve analyses for 216 wells in Utah CBM asset near Price, UT and run economics on type wells, acquisition targets, midstream projects, and other projects. Recently named a "team-lead" for an area in the Powder River Basin field. Responsible for economics, reserves, and leading projects through execution for 3 units that make up nearly 1/3 of Powder River's total production budget.

### **Anadarko Petroleum Corporation**

Vernal, UT

#### *Production Engineer II – Greater Natural Buttes*

4/2007 –

10/2009

At one point responsible for over 900 tight gas wells in Anadarko's largest onshore natural gas asset. Performed daily well surveillance and carried out artificial lift studies to recommend optimal artificial lift, remedial workovers, and stimulations. Planned and supervised the workovers and artificial lift installations and optimization. Worked on an integrated team with reservoir engineers and geologists to evaluate well results and make recommendations for improvement. Managed production costs and achieved optimum financial performance through introduction of technologies and other "best practice" concepts. In charge of teaching new production engineers about operations, plunger lift systems, and workover operations.

#### Key Accomplishments

- Realized 17% growth in base production for 2008 while budgeted for 14% decline. Sole area of field above forecast.
- Directed the new-technology plunger lift program for entire asset. Established artificial lift criteria for equipment and candidate identification. The initial stage of program increased production by 16.5 MMCFD which was more than 20% increase and resulted in \$30,000,000 yearly incremental revenue with a total project cost of \$450,000. Able to equal production of a new well for a cost of only \$40,000.
- Developed operator-friendly computer program to determine optimum plunger equipment and to optimize production.
- Worked hand-in-hand with service company to design a new production tool which resulted in 50% gains in production and replaces the need for pumping units in wet gas wells.

<p><b>Docket No. 2010-012</b> <b>Cause No. 245-01A</b> <b>Exhibit "A"</b></p>
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- Presenter at multiple in-house and industry-wide gas well deliquification workshops. Taught production optimization and best practices to other engineers, foremen, and operators.
- Initiated Google Map development for asset that quickly provides well history and significantly reduces time to pinpoint production variances.

**Anadarko Petroleum Corporation**

The

Woodlands, TX

*Production Engineer I – Austin Chalk – Central Giddings*

5/2006 –

3/2007

Responsible for 400 oil wells in naturally fractured limestone. Designed, coordinated, and supervised slickwater fracturing program. Recommended and performed workover operations as well as designed and carried out beam pumping unit installations. Performed decline curve analyses and economic evaluations.

**Key Accomplishments**

- Exceeded 2006 base production budget by 234 MBOEs and frac wedge budget by 21 MBOEs.
- Maintained 7% base production decline in area while budgeted for 14% decline with no active drilling program.
- Recommended and approved all 20 budgeted frac AFEs for 2007 before April.
- Manager recognized relationship with production foreman as best engineering/foreman pair in asset.
- Only engineer in 2006 college recruiting class to be promoted after just 10 months, when normally requiring 2 years experience.

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**PROFESSIONAL DEVELOPMENT**

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- |   |  |
|---|--|
| • Artificial Lift Systems                           | • Wellbore Dynamics                    |
| • Gas Production Engineering<br><i>presenter</i>    | • 2008 Anadarko Plunger Lift Workshop, |
| • Production Operations<br>Workshop                 | • 2008 ALRDC Gas Well Deliquification  |
| • Surface Production Facilities<br><i>presenter</i> | • 2008 Anadarko Gas Well Deliq. Conf., |

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**SOFTWARE EXPERTISE**

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ARIES, Cygnet, SAP, OFM, OpenWells, PDB, PEEP, Production Access, WINS, and Microsoft Office (Word, Excel, PowerPoint, Outlook)

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**EDUCATION & AFFILIATIONS**

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**Texas A&M University**

College

Station, TX

*Bachelor of Science, Petroleum Engineering*

5/2006

**Society of Petroleum Engineers (SPE)**

8/2002 – Present

*Uintah Basin Section Chair, 2008 – present**Uintah Basin Treasurer, 2008 - 2009*

<b>Docket No. 2010-012</b> <b>Cause No. 245-01A</b> <b>Exhibit "A"</b>
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**BEFORE THE BOARD OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH**

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IN THE MATTER OF THE REQUEST )  
FOR AGENCY ACTION OF ANADARKO )  
PETROLEUM CORPORATION FOR AN )  
ORDER ESTABLISHING 160-ACRE )  
DRILLING AND SPACING UNITS )  
FOR THE PRODUCTION OF GAS )  
(INCLUDING COALBED METHANE) )  
FROM THE FERRON FORMATION IN )  
ALL OR PART OF SECTIONS 20-29 )  
AND 32-36, T13S, R10E, AND )  
ALL OR PART OF SECTIONS 1-6 )  
AND 8-11, T14S, R10E, SLM, )  
CARBON COUNTY, UTAH. )

**FINDINGS OF FACT,  
CONCLUSIONS OF LAW,  
AND ORDER**

Docket No. 97-023

Cause No. 241-1

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Pursuant to the October 20, 1997 Request for Agency Action ("Petition") of Anadarko Petroleum Corporation ("Petitioner"), this cause came on for hearing before the Utah Board of Oil, Gas and Mining (the "Board") on Wednesday, December 10, 1997, at the hour of 10:00 a.m. The following Board members, constituting a quorum, were present and participated at the hearing:

Dave Lauriski, Chairman  
Stephanie Cartwright  
Jay L. Christensen  
Elise Erler  
Thomas B. Faddies  
Allan Mashburn  
Raymond Murray

Attending and participating on behalf of the Division of Oil, Gas and Mining (the "Division") were Lowell Braxton, Acting Director; John Baza, Associate Director; and Brad Hill, Geologist.



The Division was represented by Daniel G. Moquin, Assistant Attorney General. Counsel to the Board was Patrick J. O'Hara, Assistant Attorney General.

The United States Bureau of Land Management ("BLM") was represented by Robert Henricks and Assad Raffoul from the Utah State Office. The Utah School and Institutional Trust Lands Administration ("SITLA") was represented by James Cooper.

Testifying on behalf of Petitioner were Stephen K. Ruhl, Senior Staff Geologist, and John H. Beaird III, Reservoir Engineering Supervisor. The Petitioner was represented by Clayton J. Parr and Daniel A. Jensen of Parr, Waddoups, Brown, Gee & Loveless.

The Division, the BLM and SITLA made statements in support of the Petition. No statements were made in opposition to the Petition.

The Board having considered the testimony presented and the exhibits received at the hearing, being fully advised, and for good cause appearing, hereby makes and enters the following Findings of Fact, Conclusions of Law, and Order.

#### FINDINGS OF FACT

1. The Petition seeks an order establishing 160-acre drilling and spacing units for the production of gas, including but not limited to coalbed methane, from the Ferron Formation in the following-described lands (the "Subject Lands"):

T13S, R10E, SLM, Carbon County, Utah

Section 20: S $\frac{1}{2}$   
Section 21: S $\frac{1}{2}$   
Section 22: N $\frac{1}{2}$ , SE $\frac{1}{4}$ , Lots 1-4 [All]  
Section 23: All  
Section 24: Lots 1-16 [All]  
Section 25: Lots 1-16 [All]  
Section 26: All  
Section 27: E $\frac{1}{2}$ , Lots 1-8 [All]  
Section 28: All  
Section 29: All  
Section 32: All  
Section 33: All  
Section 34: SW $\frac{1}{4}$ , N $\frac{1}{2}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$ , Lots 1-8 [All]  
Section 35: E $\frac{1}{2}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ , Lots 1-6 [All]  
Section 36: All

T14S, R10E, SLM, Carbon County, Utah

Section 1: S $\frac{1}{2}$ , S $\frac{1}{2}$ N $\frac{1}{2}$ , Lots 1-4 [All]  
Section 2: S $\frac{1}{2}$ , S $\frac{1}{2}$ N $\frac{1}{2}$ , Lots 1-4 [All]  
Section 3: S $\frac{1}{2}$ , S $\frac{1}{2}$ N $\frac{1}{2}$ , Lots 1-4 [All]  
Section 4: S $\frac{1}{2}$ , S $\frac{1}{2}$ N $\frac{1}{2}$ , Lots 1-4 [All]  
Section 5: S $\frac{1}{2}$ , S $\frac{1}{2}$ N $\frac{1}{2}$ , Lots 1-4 [All]  
Section 6: S $\frac{1}{2}$ NE $\frac{1}{4}$ , Lots 1-2  
Section 8: N $\frac{1}{2}$ , SE $\frac{1}{4}$   
Section 9: W $\frac{1}{2}$ , NE $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ , Lots 4-29 [All]  
Section 10: All  
Section 11: All

2. For purposes of this Petition, the Ferron Formation is defined as the stratigraphic equivalent of the interval from 1,968 feet below the surface to 2,214 feet below the surface as shown in the density log for the Birch A-1 well located in the SW $\frac{1}{4}$  of Section 5, T14S, R10E, SLM.

3. Petitioner is a Delaware corporation in good standing and authorized to conduct business in the State of Utah.

4. Petitioner is an operating rights owner in the Subject Lands as well as in other adjacent lands.

5. Petitioner has drilled, completed and operated several wells within the Subject Lands for the purpose of producing coalbed methane from the Ferron Formation, and intends to drill, complete and operate additional wells within the Subject Lands for the same purpose.

6. The Ferron Formation, including all coal and surrounding sands, constitutes one pool for gas contained within the Subject Lands, and one well will efficiently and economically drain 160 acres in that pool. The Subject Lands are not currently subject to any spacing order by this Board.

7. The establishment of 160-acre drilling and spacing units within the Subject Lands will allow for the orderly development of the Subject Lands, prevent waste in the drilling of unnecessary wells, adequately protect the correlative rights of all affected parties, and result in the greatest recovery of hydrocarbon substances, and is just and reasonable under the circumstances.

8. Each such unit should comprise a governmental quarter section (e.g. NE $\frac{1}{4}$ ) or equivalent lots, and the permitted well for each such unit should be located no closer than 920 feet from other wells completed and producing from the Ferron Formation and no closer than 460 feet from the outer boundary of the 160-acre drilling and spacing unit, except as may otherwise be permitted by administrative action for topographic or geologic reasons.

### CONCLUSIONS OF LAW

1. Due and regular notice of the time, place and purpose of the hearing on this Petition was given to all interested owners in the form and manner required by law and the rules of the Board. The Petition was properly before the Board at the hearing.

2. The Board has jurisdiction over the matters covered by the Petition and over all interested parties therein, and has jurisdiction to make and promulgate the Order hereinafter set forth.

3. The Petition should be granted.

### ORDER

After considering the testimony and evidence presented at the hearing along with the comments received from the representatives of the Division, the BLM and SITLA, the Board, having made the foregoing Findings of Fact and Conclusions of Law, now enters the following Order:

A. The Petitioner's Request for Agency Action is granted.

B. 160-acre drilling and spacing units are hereby established for the Subject Lands (as defined herein) for the production of gas, including but not limited to coalbed methane, from the Ferron Formation (as defined herein) including all coals and surrounding sands.

C. Each such unit shall comprise a governmental quarter section (e.g. NE $\frac{1}{4}$ ) or equivalent lots, and the permitted well for each such unit shall be located no closer than 920 feet from other

wells completed and producing from the Ferron Formation and no closer than 460 feet from the outer boundary of the 160-acre drilling and spacing unit, unless otherwise permitted by administrative action approved by the Division of Oil, Gas & Mining in compliance with Utah Administrative Code R649-3-3 (rule governing "Exception to Location and Siting of Wells").

D. Pursuant to Utah Administrative Code R641 and Utah Code Ann. § 63-46b-6 to -10 (1953, as amended), the Board has considered and decided this matter as a formal adjudication.

E. This Findings of Fact, Conclusion of Law and Order ("Order") is based exclusively on evidence of record in the adjudicative proceeding or on facts officially noted, and constitutes the signed written order stating the Board's decision and the reasons for the decision, all as required by the Administrative Procedures Act, Utah Code Ann. § 63-46b-10 and Utah Administrative Code R641-109.

F. Notice re Right to Seek Judicial Review by the Utah Supreme Court or to Request Board Reconsideration: As required by Utah Code Ann. § 63-46b-10(e) to -10(g) (1953, as amended), the Board hereby notifies all parties in interest that they have the right to seek judicial review of this final Board Order in this formal adjudication by filing a timely appeal with the Utah Supreme Court within 30 days after the date that this Order issued. Utah Code Ann. § 63-46b-14(3)(a) and -16 (1953, as amended). As an alternative to seeking immediate judicial review, and not as a

prerequisite to seeking judicial review, the Board also hereby notifies parties that they may elect to request that the Board reconsider this Order, which constitutes a final agency action of the Board. Utah Code Ann. § 63-46b-13, entitled, "Agency review - Reconsideration," states:

(1)(a) Within 20 days after the date that an order is issued for which review by the agency or by a superior agency under Section 63-46b-12 is unavailable, and if the order would otherwise constitute final agency action, any party may file a written request for reconsideration with the agency, stating the specific grounds upon which relief is requested.

(b) Unless otherwise provided by statute, the filing of the request is not a prerequisite for seeking judicial review of the order.

(2) The request for reconsideration shall be filed with the agency and one copy shall be sent by mail to each party by the person making the request.

(3)(a) The agency head, or a person designated for that purpose, shall issue a written order granting the request or denying the request.

(b) If the agency head or the person designated for that purpose does not issue an order within 20 days after the filing of the request, the request for reconsideration shall be considered to be denied.

Id. The Board also hereby notifies the parties that Utah Administrative Code R641-110-100, which is part of a group of Board rules entitled, "Rehearing and Modification of Existing Orders," states:

Any person affected by a final order or decision of the Board may file a petition for rehearing. Unless otherwise provided, a petition for rehearing must be filed no later than the 10<sup>th</sup> day of the month following the date of signing of the final order or decision

for which the rehearing is sought. A copy of such petition will be served on each other party to the proceeding no later than the 15<sup>th</sup> day of that month.

Id. See Utah Administrative Code R641-110-200 for the required contents of a petition for Rehearing. If there is any conflict between the deadline in Utah Code Ann § 63-46b-13 (1953, as amended) and the deadline in Utah Administrative Code R641-110-100 for moving to rehear this matter, the Board hereby rules that the later of the two deadlines shall be available to any party moving to rehear this matter. If the Board later denies a timely petition for rehearing, the party may still seek judicial review of the order by perfecting a timely appeal with the Utah Supreme Court within 30 days thereafter.

G. The Board retains continuing jurisdiction over all the parties and over the subject matter of this matter, except to the extent said jurisdiction may be divested by the filing of a timely appeal to seek judicial review of this order by the Utah Supreme Court.

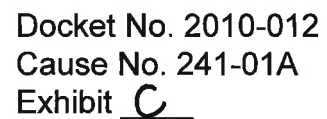
H. For all purposes, the Chairman's signature on a faxed copy of this Order shall be deemed the equivalent of a signed original.

ISSUED this 2nd day of January, 1998.

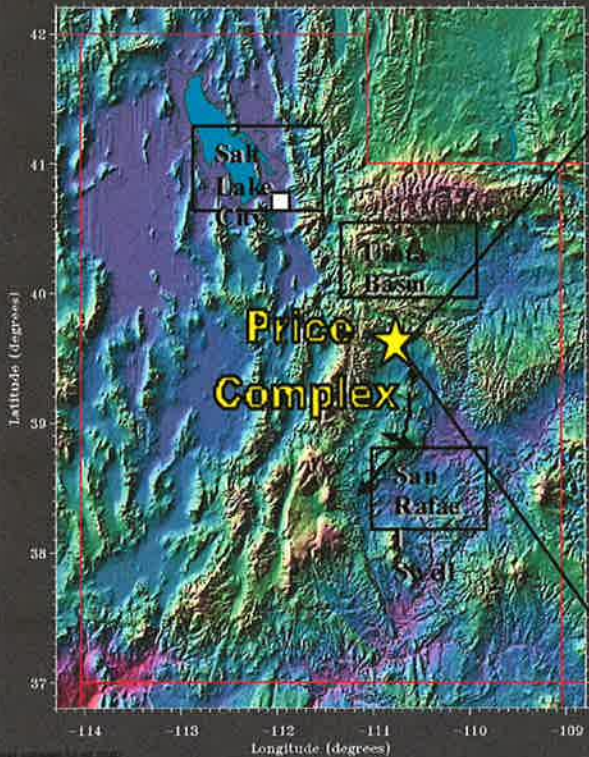
STATE OF UTAH  
BOARD OF OIL, GAS AND MINING

By   
Dave D. Lauriski, Chairman

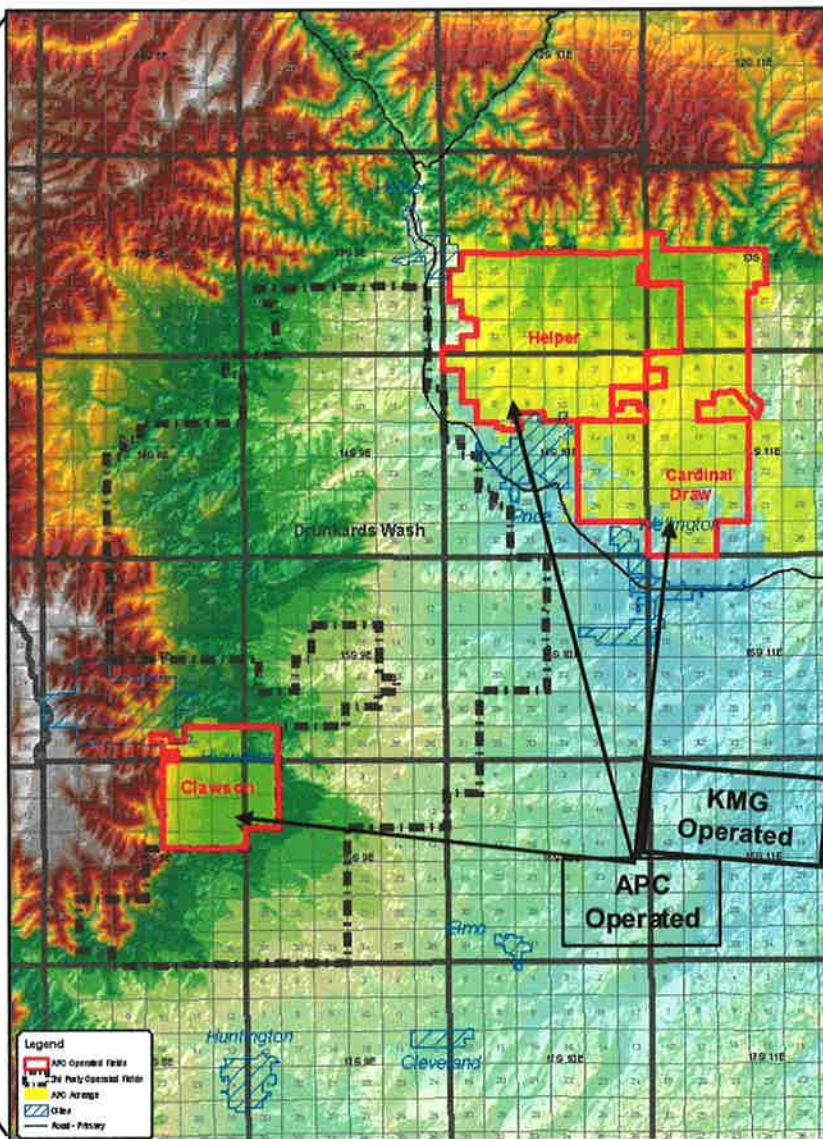




## Regional Overview

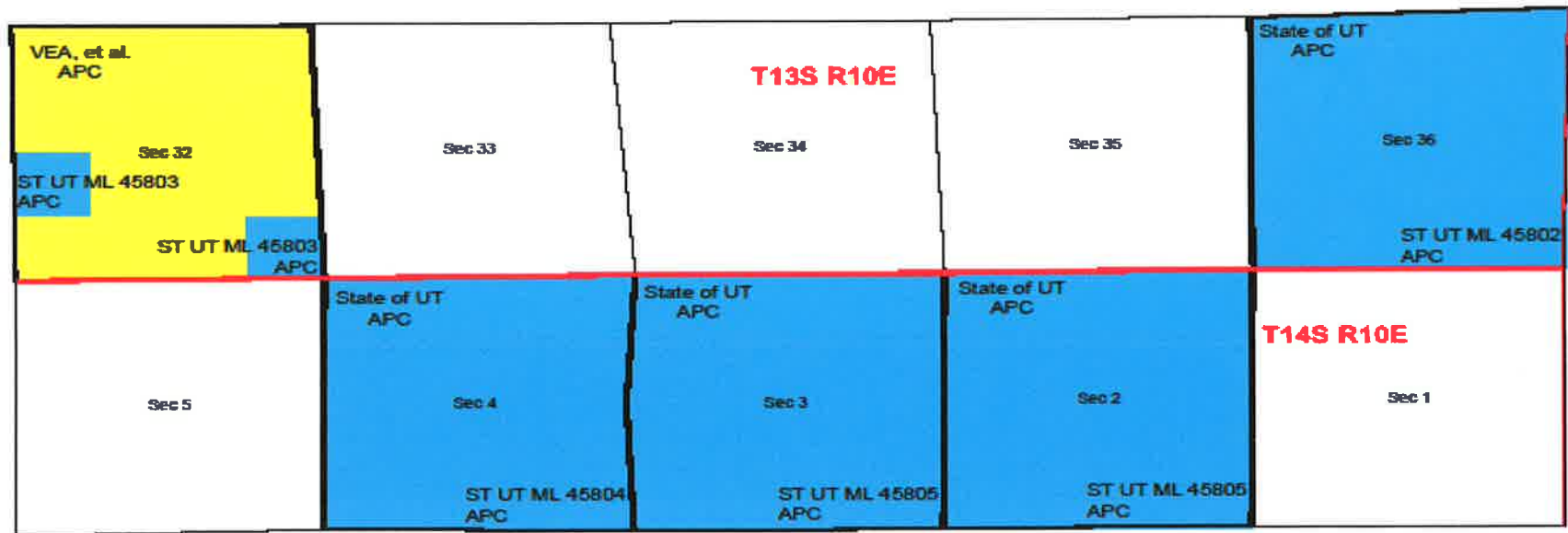


Shaded Relief Image Copyright 1996  
By Ray Sterner, John Hopkins  
University  
<http://fermi.jhuapl.edu/states/>







# Leasehold Map



## Legend

- Pilot Sections
- FEE
- STATE of UTAH




0 1,200 2,400 4,800  
Feet

	
	Docket No. 2010-012
	Cause No. 241-01A
Scale: 1:31,945	Exhibit <u>DI</u>
	Projection: NAD 83 UTM 12N UTM 12N UTM 12N
Date: 2/17/2010	Author: Eric Branton

# Section 32 Leasehold



## Legend

-  Pilot Sections
-  FEE
-  STATE of UTAH



Docket No. 2010-012  
Cause No. 241-01A  
Exhibit DZ

Scale: 1:12,000

Projection: NAD 1927 SPCC Utah Central

Date: 2/17/2010

Author: Eric Branton

# Production Interest Owners

## T13S-R10E, S.L.M.

Section 32 - Anadarko Petroleum Corporation (WI Owner)  
The State of Utah (Lessor/Roy Interest Owner)  
The Royal and Glenna E. Stewart Trust,  
dated January 20, 1993 (Lessor/Roy Interest Owner)  
Mr. and Mrs. Antonio Miguel Vallejos (Lessor/Roy Interest Owner)  
Mr. and Mrs. Talmadge Lee Fillingham (Lessor/Roy Interest owner)  
Helper Associates, LP (Lessor/Roy Interest Owner)  
Mr. and Mrs. Jerry L. Veal (Lessor/Roy Interest Owner)  
Mr. and Mrs. John Veal (Lessor/Roy Interest Owner)  
Eleanora Vallejos (Lessor/Roy Interest Owner)  
Devon Uinta Basin Corporation (ORRI Owner)  
ConocoPhillips Company (ORRI Owner)

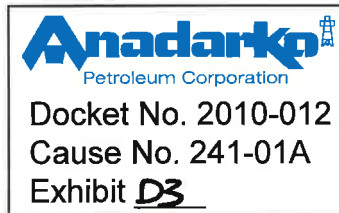
Section 36 - Anadarko Petroleum Corporation (WI Owner)  
The State of Utah (Lessor/Roy Interest Owner)

## T14S-R10E, S.L.M.

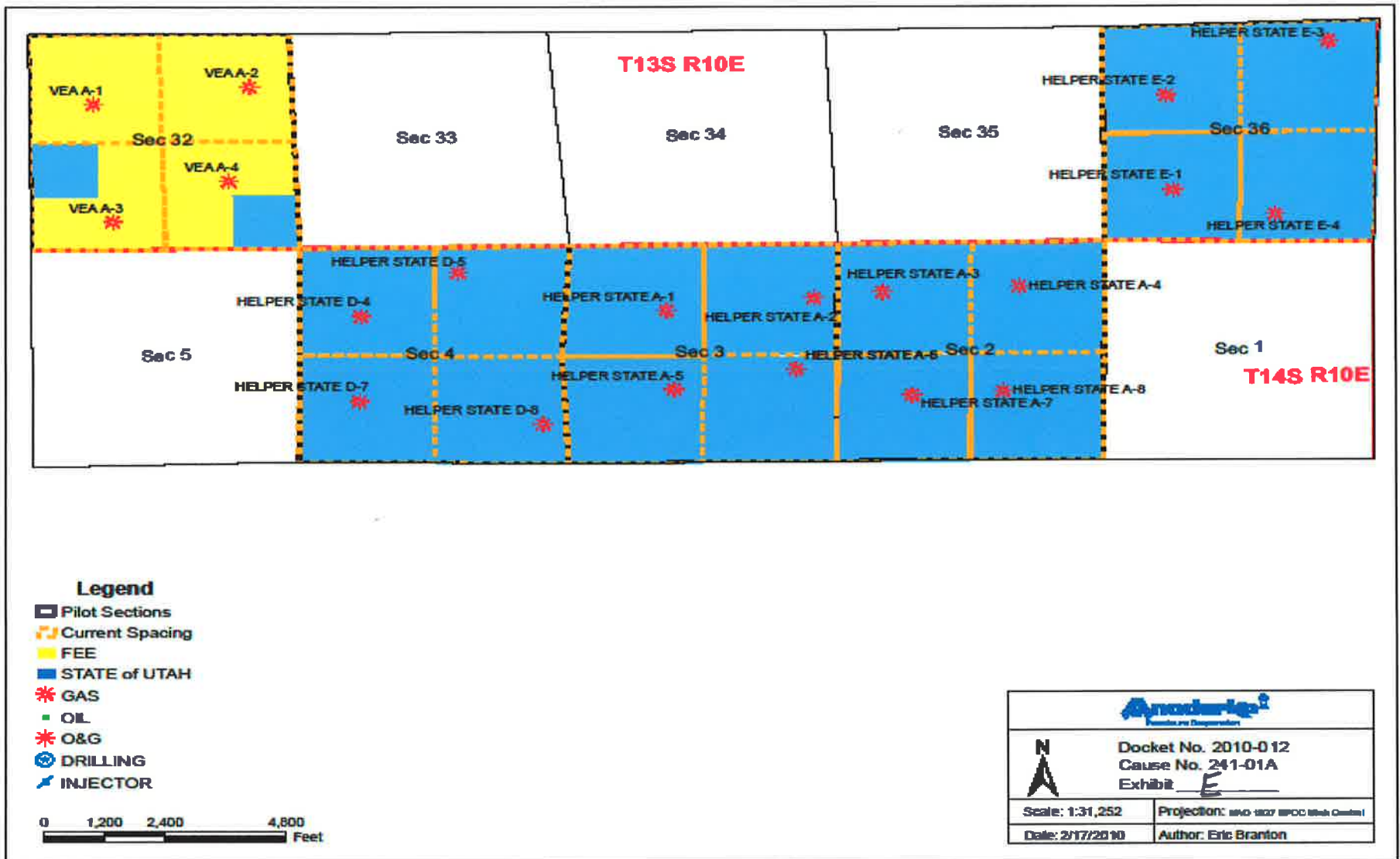
Section 2 - Anadarko Petroleum Corporation (WI Owner)  
The State of Utah (Lessor/Roy Interest Owner)

Section 3 - Anadarko Petroleum Corporation (WI Owner)  
The State of Utah (Lessor/Roy Interest Owner)

Section 4 - Anadarko Petroleum Corporation (WI Owner)  
The State of Utah (Lessor/Roy Interest Owner)



# Current Spacing



SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X <i>Carol Paul</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <i>Carol Paul</i></p> <p>C. Date of Delivery <i>2-17-10</i></p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>Helper Associates, a Limited Partnership, c/o S.V. Litizzette 30 South Main Helper, UT 84526</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 3995</b></p>			
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>			

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X <i>JK</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)</p> <p>C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>Kerr-McGee Oil &amp; Gas Onshore LP Attn: Patrick McGraw 1099 18<sup>th</sup> Street, Suite 1800 Denver, CO 80202</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 4008</b></p>			
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>			

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)</p> <p>C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>State of Utah School and Institutional Trust Lands Administration Attn: LaVonne J. Garrison, Associate Director - Oil &amp; Gas 675 E. 500 South #500 Salt Lake City, UT 84102</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 3971</b></p>			
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SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X <i>James Fillingim</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)</p> <p>C. Date of Delivery <i>2-13-10</i></p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p>Mr. and Mrs. John Vea Route 1, Box 96 Helper, UT 84526</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 4060</b></p>			
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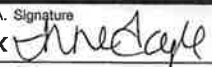
SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
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<p>1. Article Addressed to:</p> <p>Mr. and Mrs. Talmadge Lee Fillingim Route 1, Box 96-E Helper, UT 84526</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 4046</b></p>			
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>			

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
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<p>1. Article Addressed to:</p> <p>Royal Stewart and Glenna E. Stewart, Trustees of the Royal and Glenna E. Stewart Trust, dated January 20, 1993 Route 1, Box 96-A Helper, UT 84526</p>		<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) <b>7006 0100 0001 7031 4053</b></p>			
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>			

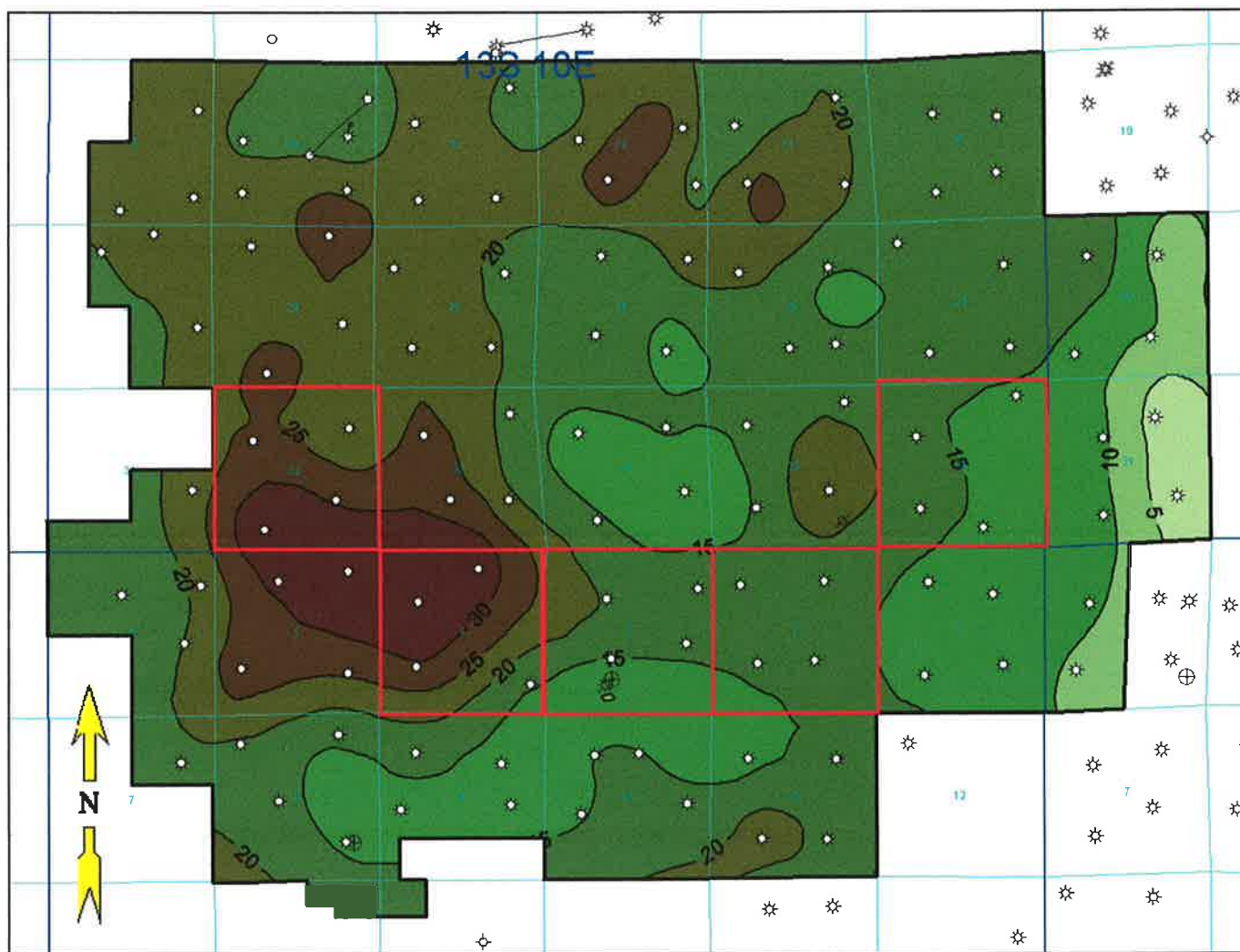
EXHIBIT F



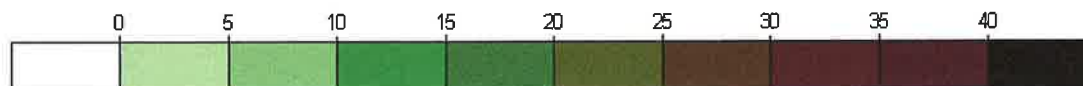
SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X </p> <p><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p>Devon Uinta Basin Corporation Attn: Charles A. Speer 20 North Broadway, Suite 1500 Oklahoma City, OK 73102</p>		<p>B. Received by (Printed Name) C. Date of Delivery 2/16/10</p>	
<p>2. Article Number (Transfer from service label) 7006 0100 0001 7031 4039</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>PS Form 3811, February 2004</p>		<p>Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature X </p> <p><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p>ConocoPhillips Company Attn: Justin Williams 3300 North A Street Midland, TX 79705</p>		<p>B. Received by (Printed Name) C. Date of Delivery 2/16/10</p>	
<p>2. Article Number (Transfer from service label) 7006 0100 0001 7031 3988</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>PS Form 3811, February 2004</p>		<p>Domestic Return Receipt 102595-02-M-1540</p>	

# Ferron Gross Coal Isopach of Helper Field



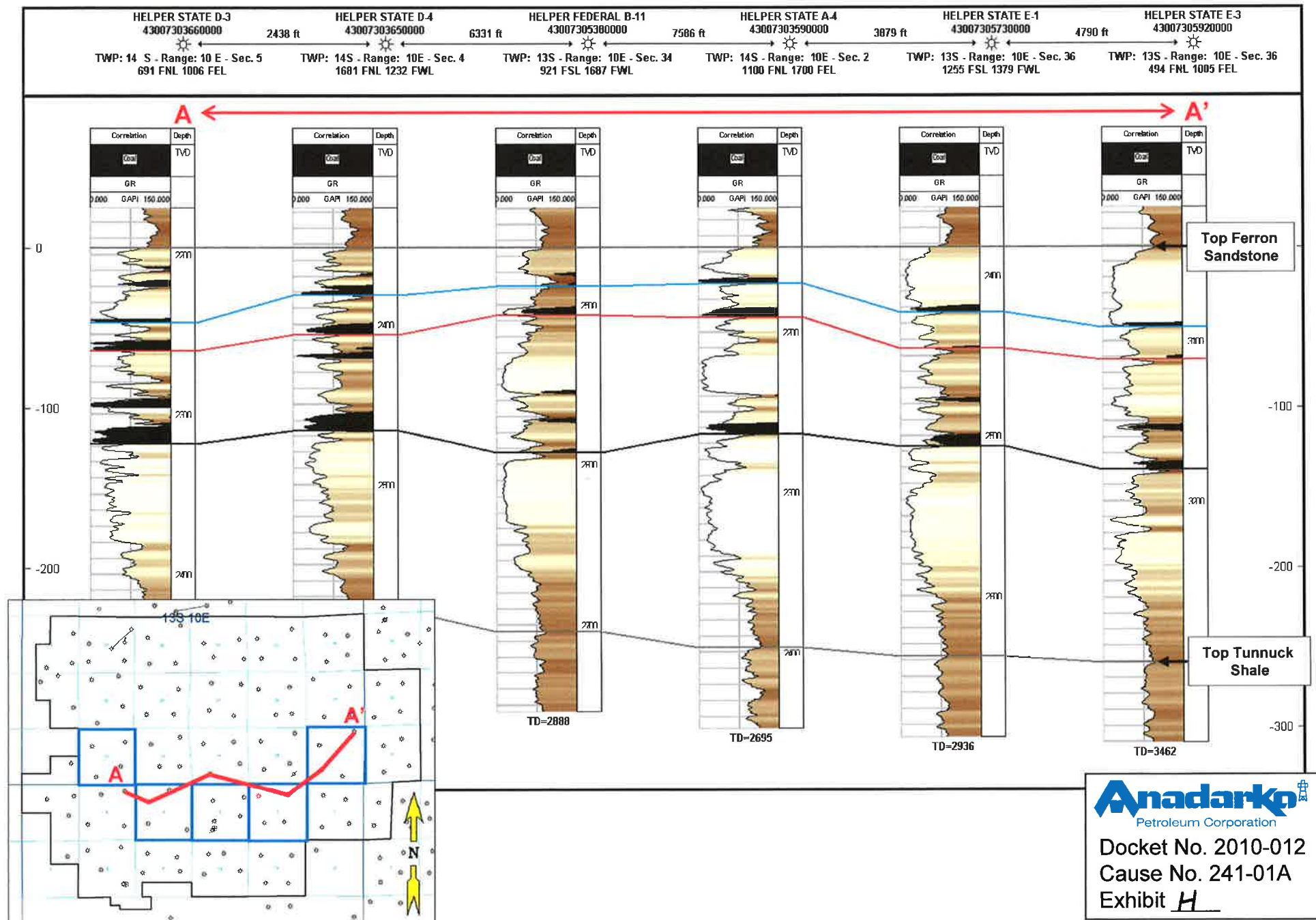
(contours measured in feet)



**Anadarko**  
Petroleum Corporation

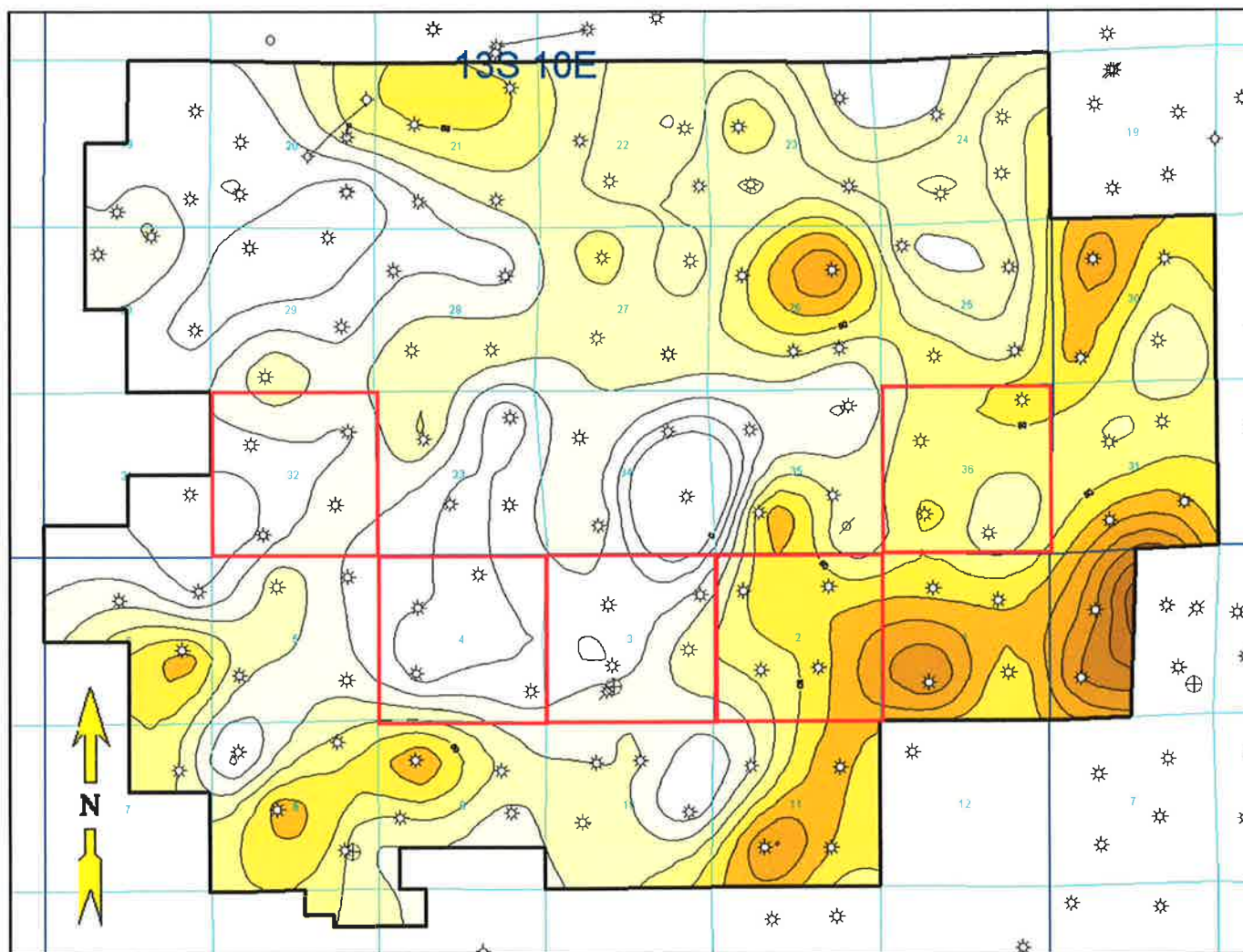
Docket No. 2010-012  
Cause No. 241-01A  
Exhibit G

# Ferron Stratigraphic Cross Section (in feet)

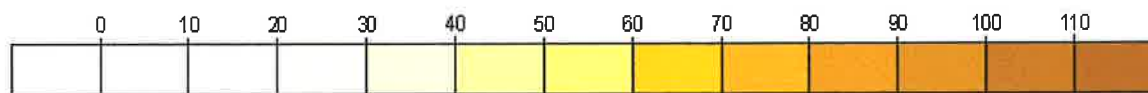




# Ferron Net Sand Isopach of Helper Field



(contours measured in feet)



GR < 50 API, Porosity 5-20%

**Anadarko**  
Petroleum Corporation

Docket No. 2010-012

Cause No. 241-01A

Exhibit I

# Gas-In-Place & Drainage Area Calculations

Assumptions: {

Drainage Area =	160	acres
Initial Pressure Gradient =	0.433	psi/ft
Avg Sw =	73%	

Well Name	Coal								
	h	avg rhob	avg GC	h	avg rhob	avg GC	h	avg rhob	avg GC
	rhob 1.15-1.35			rhob 1.35-1.55			rhob 1.55-1.75		
HELPER FEDERAL 8	3.1	1.33	324	8.8	1.41	280	7.0	1.65	186

Carbonaceous Shale											
h	avg rhob	avg GC	h	avg rhob	avg GC	h	avg rhob	avg GC	h	avg rhob	avg GC
rhob 1.75-1.95			rhob 1.95-2.15			rhob 2.15-2.35			rhob 2.35-2.55 & GR > 80		
5.5	1.84	133	7.6	2.04	89	14.8	2.26	48	9.7	2.48	15

Sandstone	Avg $\phi$ ss (%)	TD (ft)	Res Depth (ft)	Pressure (psi)	Temp (F)	$B_g$
GR < 50						
2.35 < rhob < 2.55						
19.1	8.7%	3,304	3,079	1,333	96	0.01016

Gas-In-Place (MMcf)								Total Initial GIP (MMcf)	EUR (MMcf)
Coal			Carbonaceous Shale				Sandstone		
rhob 1.15-1.35	rhob 1.35-1.55	rhob 1.55-1.75	rhob 1.75-1.95	rhob 1.95-2.15	rhob 2.15-2.35	rhob 2.35-2.55	rhob 2.35-2.55		
290	756	466	292	301	351	76	307		

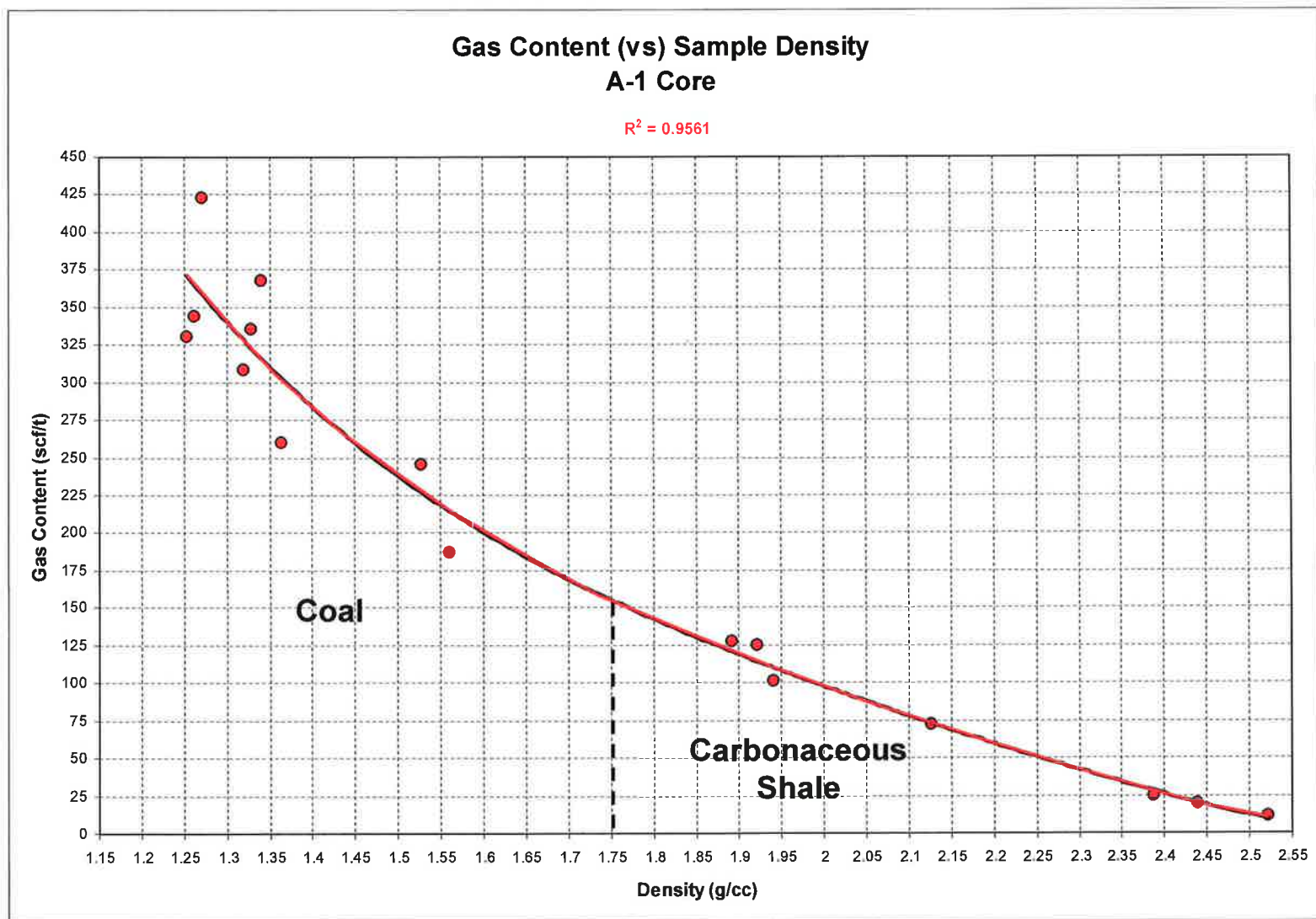
-GIP calculated from Coals, Carbonaceous Shales, and Sandstones

$$\text{Sandstone GIP (MMcf)} = ((43560 \times \text{Area} \times \text{Thickness} \times \text{Porosity} \times (1-S_w))/B_g)/1000000$$

$$\text{Coal \& Carb Shale GIP (MMcf)} = (1360 \times \text{Area} \times \text{Thickness} \times \text{Density} \times \text{Gas Content})/1000000$$

-Drainage Areas calculated by solving for Area using the EUR as the Total GIP value

-Assuming a coal Recovery Factor of 85%, carbonaceous shale RF of 60%, and sandstone RF of 80% - Drainage areas become ~25% larger



(Desorption Analysis: Based on as received, values are averages of different desorption analysis methods) (Densities are measured values, not calculated)

-Gas Content curves were created by inputting the RhoB curves into the equation for the red line above

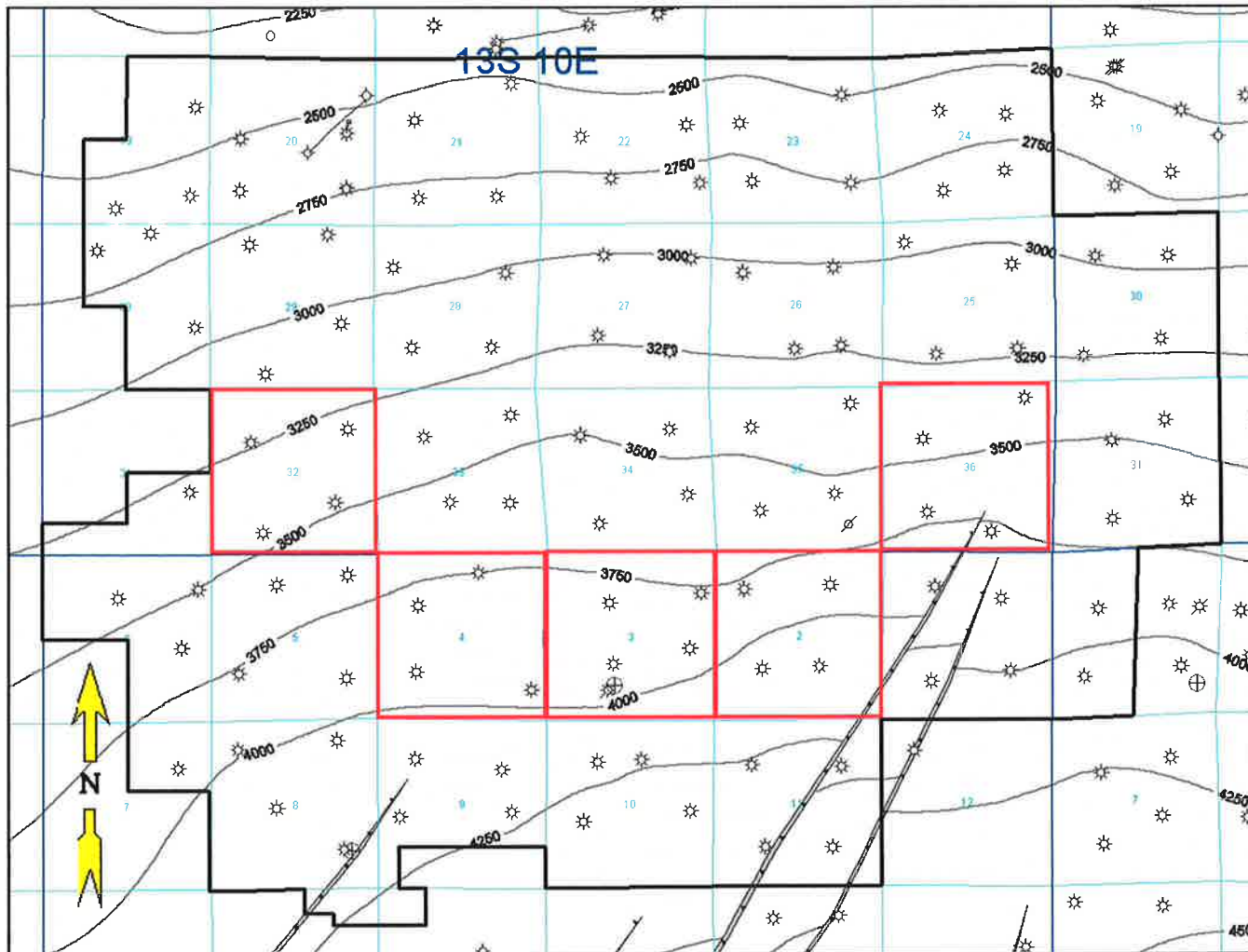
**Anadarko**  
Petroleum Corporation

Docket No. 2010-012

Cause No. 241-01A

Exhibit K

# Top Ferron Structure Map (depths are subsea)



(structure contour interval of 50')

-Reverse faults and associated fractures trend NE-SW (Faults in Helper have up to 75' of offset and are visible on seismic and well logs)

**Anadarko**  
Petroleum Corporation

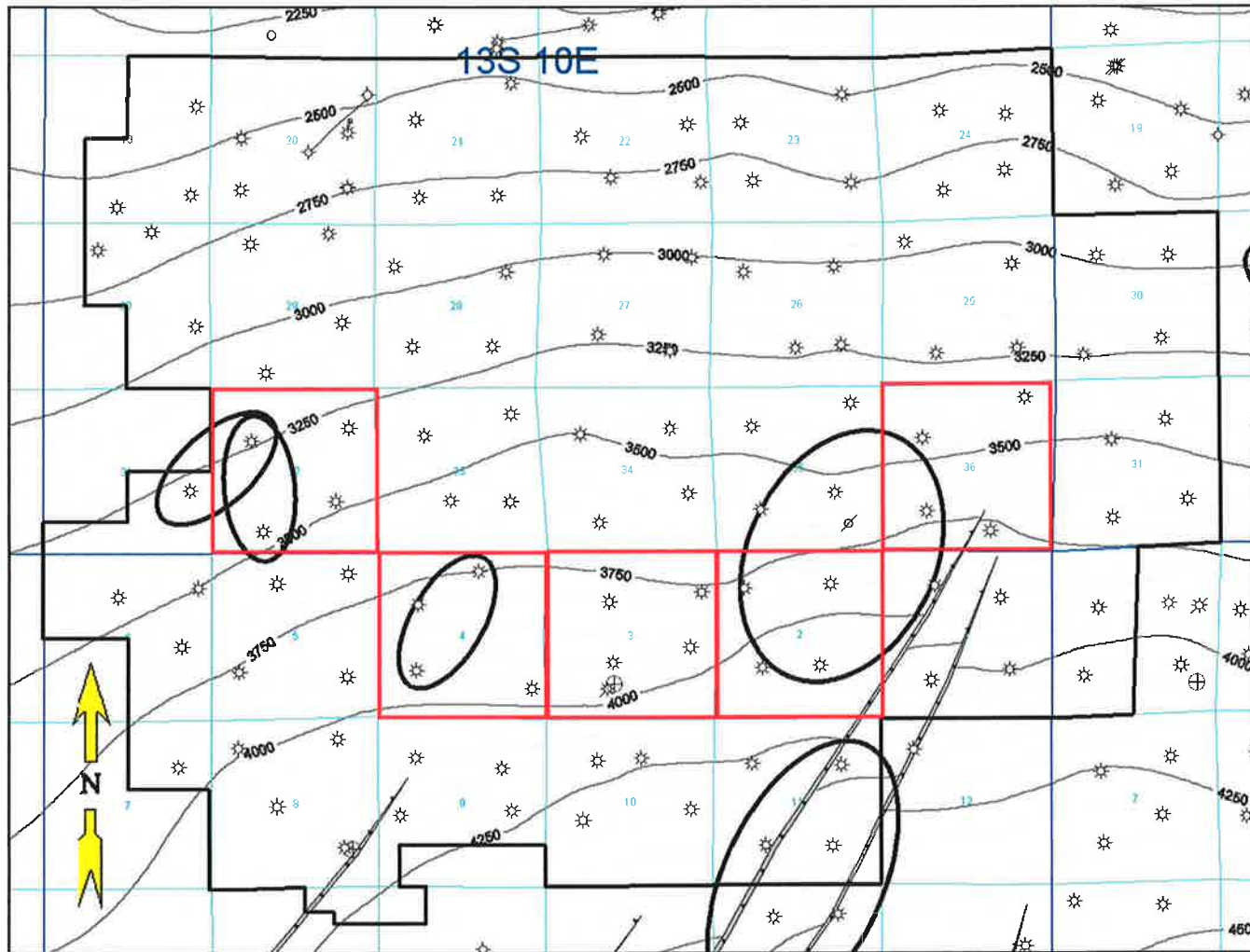
Docket No. 2010-012

Cause No. 241-01A

Exhibit L




# Communicating Wells



(structure contour interval of 50')

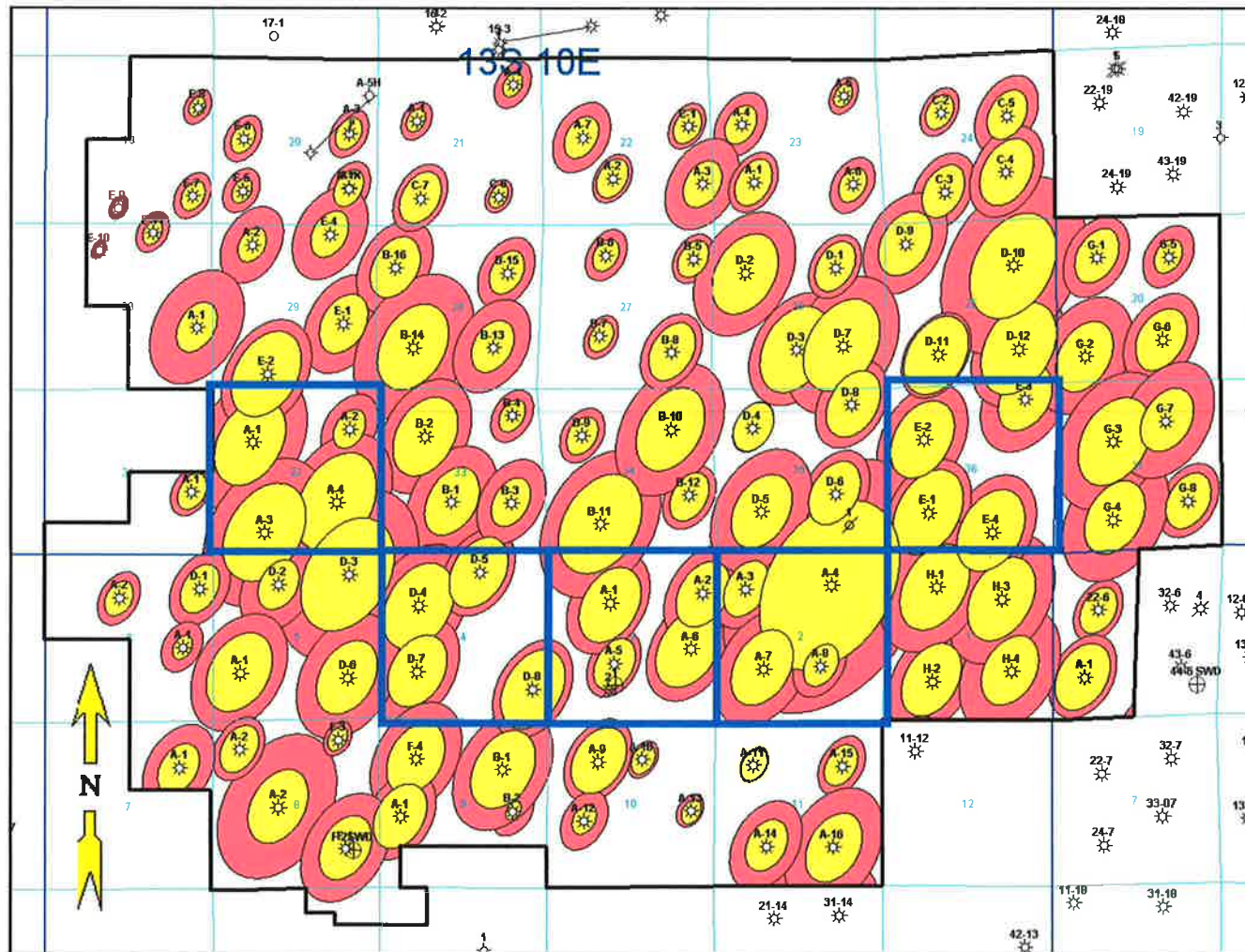
-Wells that are communicating are circled in black (communication is based on decline curve analysis and operator information)

 { Adopted Drainage Orientation based on recognized communication and fault & associated fracture orientations (a conservative 1 to 1.5 ellipse ratio was estimated for these drainages)

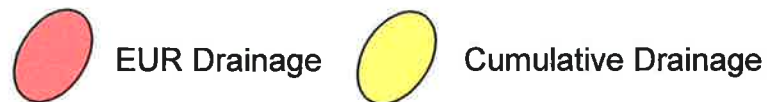
**Anadarko**  
Petroleum Corporation

Docket No. 2010-012  
Cause No. 241-01A  
Exhibit M

# Helper Well Drainages

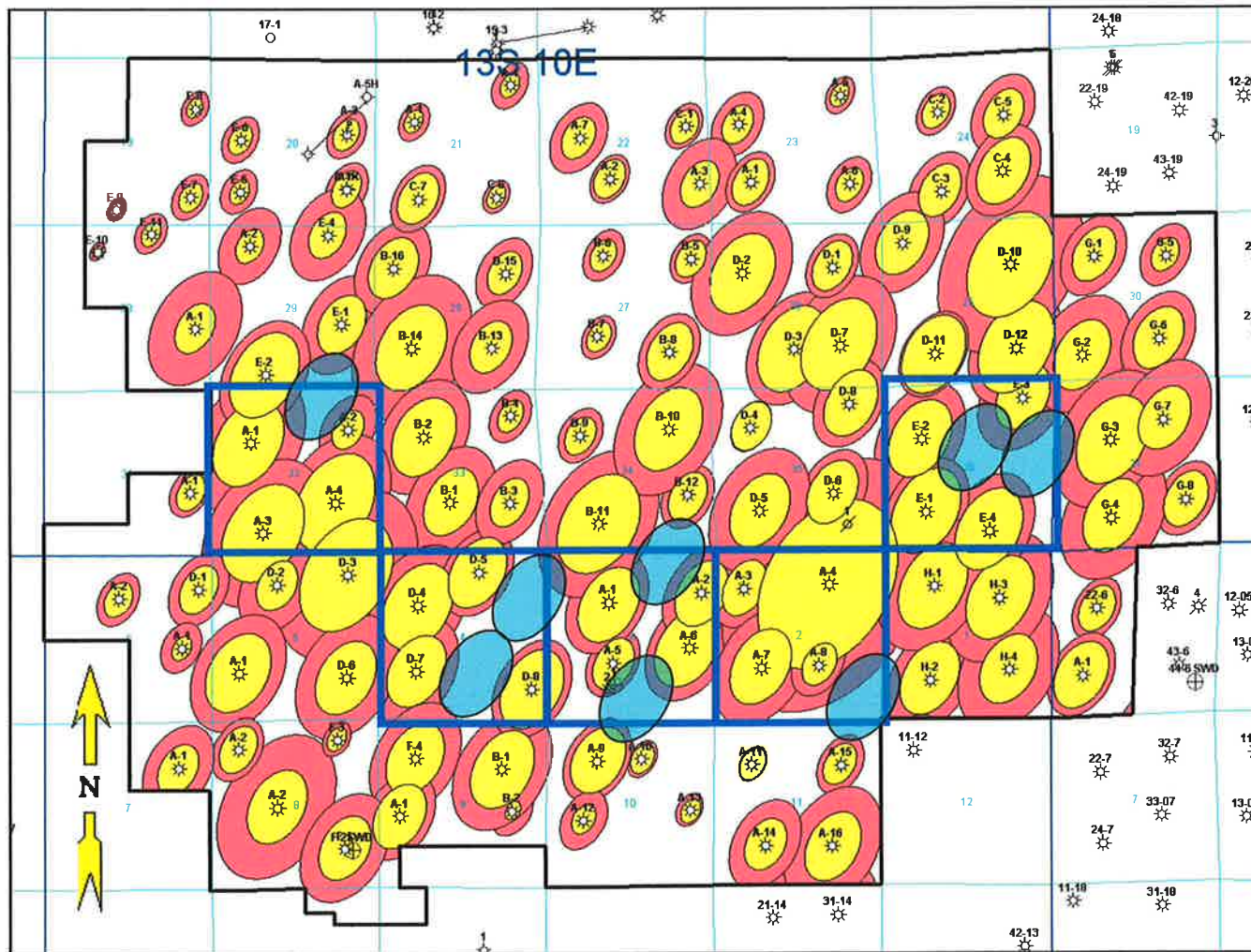


-The white areas represent reserves that will not be captured





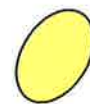
# Helper Potential Infill Locations



P50 Drainage = 113 acres



EUR Drainage

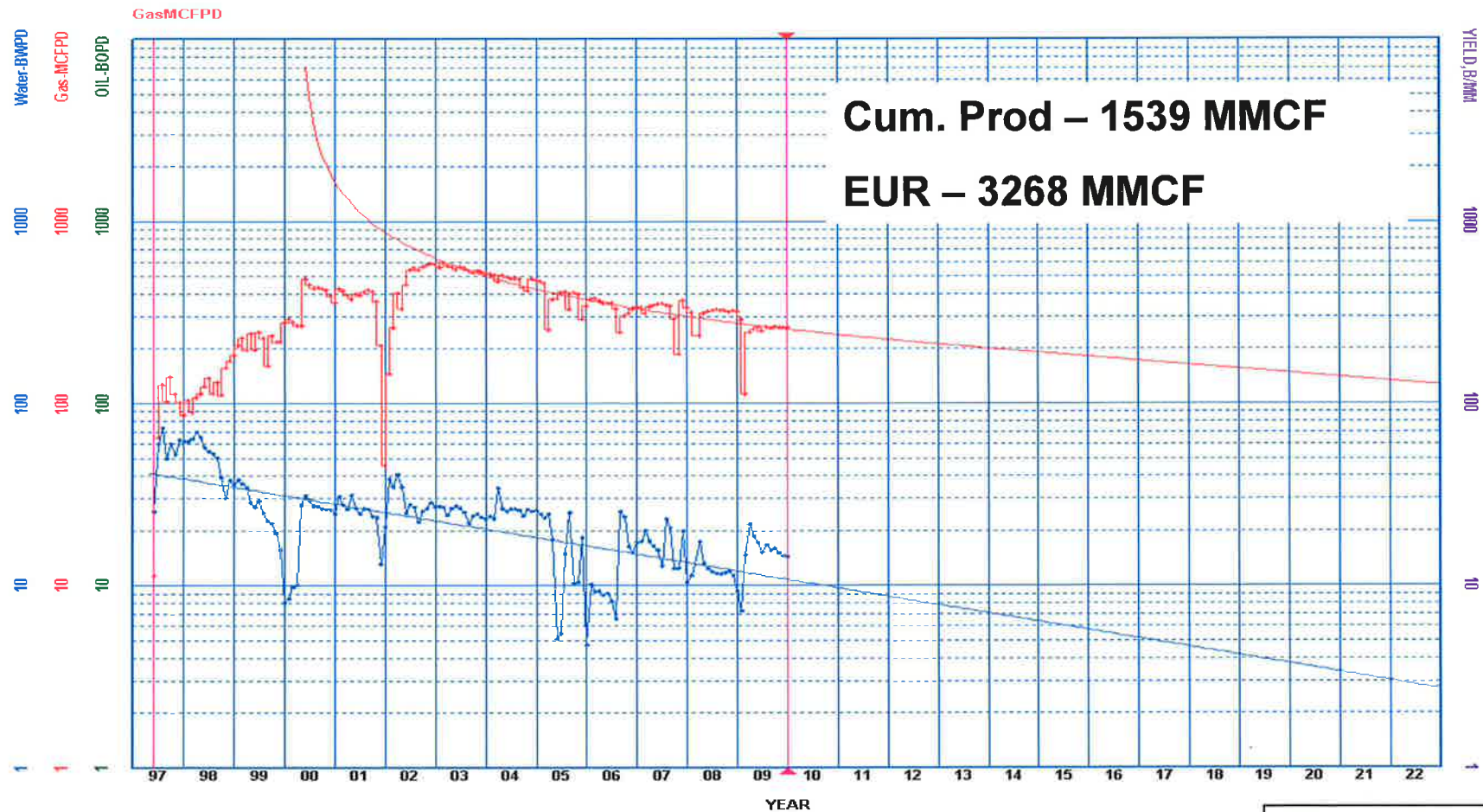


Cumulative Drainage



Docket No. 2010-012  
Cause No. 241-01A  
Exhibit O

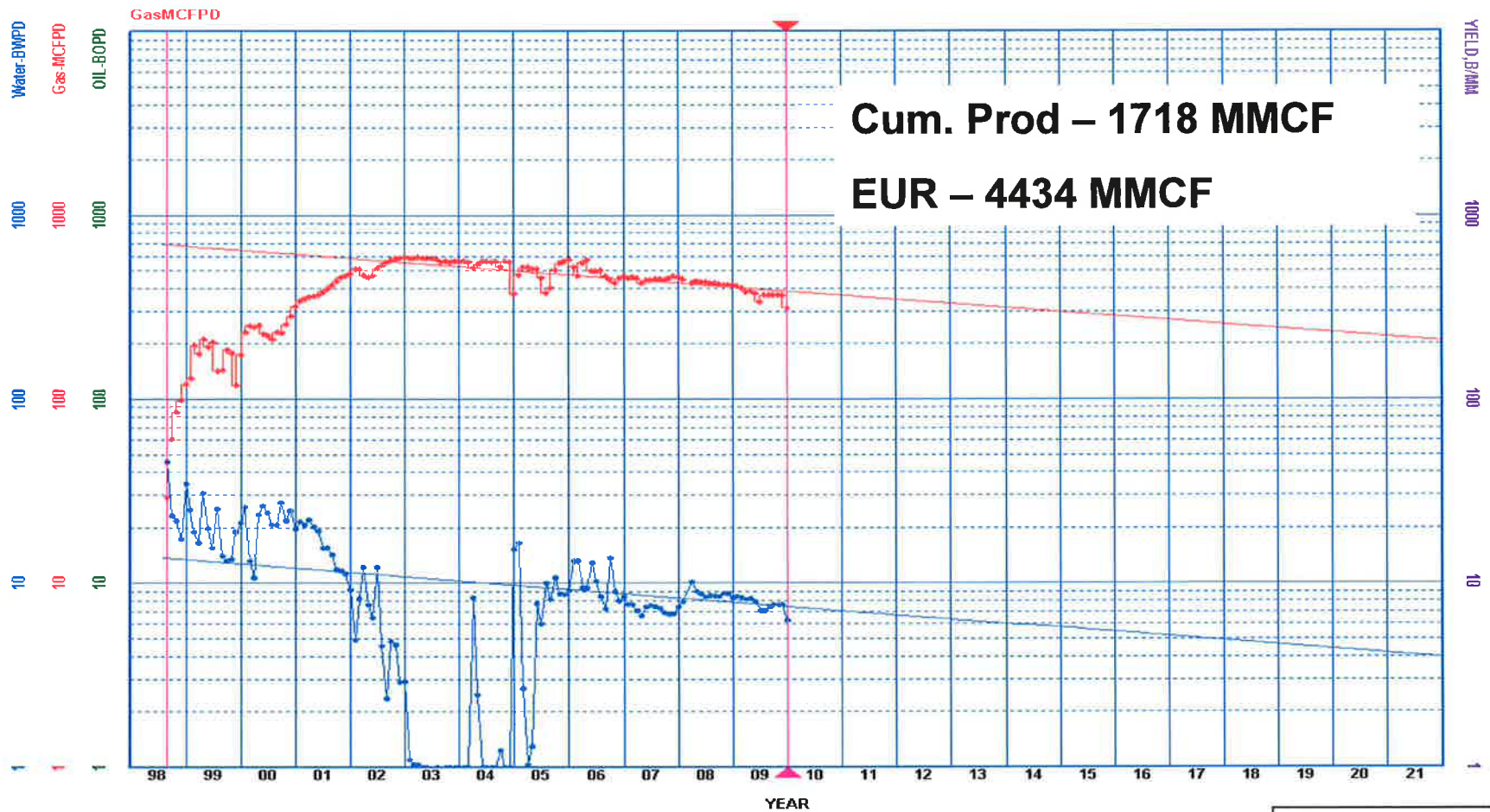
# Helper State D-7



Docket No. 2010-012  
Cause No. 241-01A  
Exhibit PI

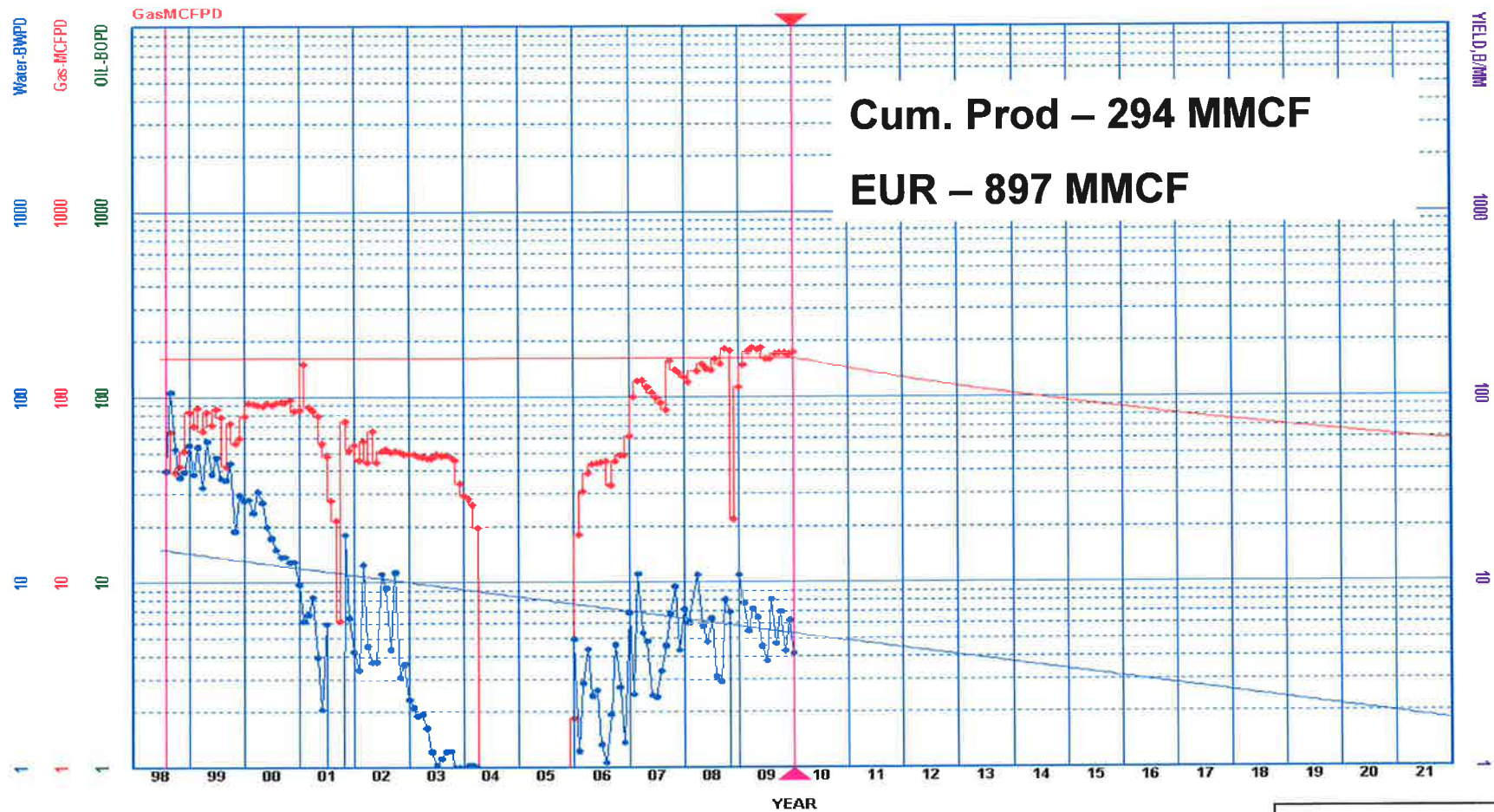


# VEA A-1



Docket No. 2010-012  
Cause No. 241-01A  
Exhibit P2

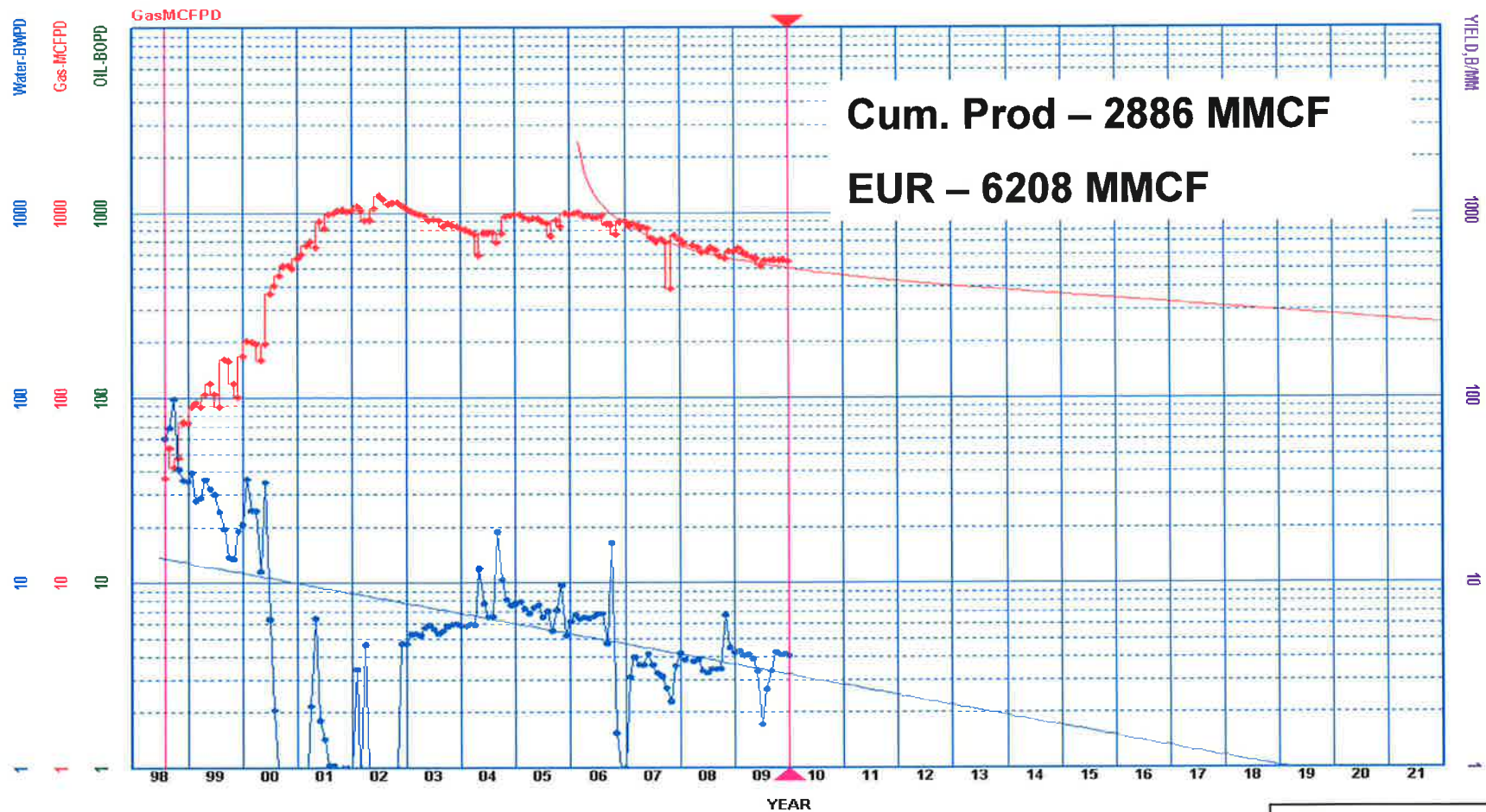
# VEA A-2



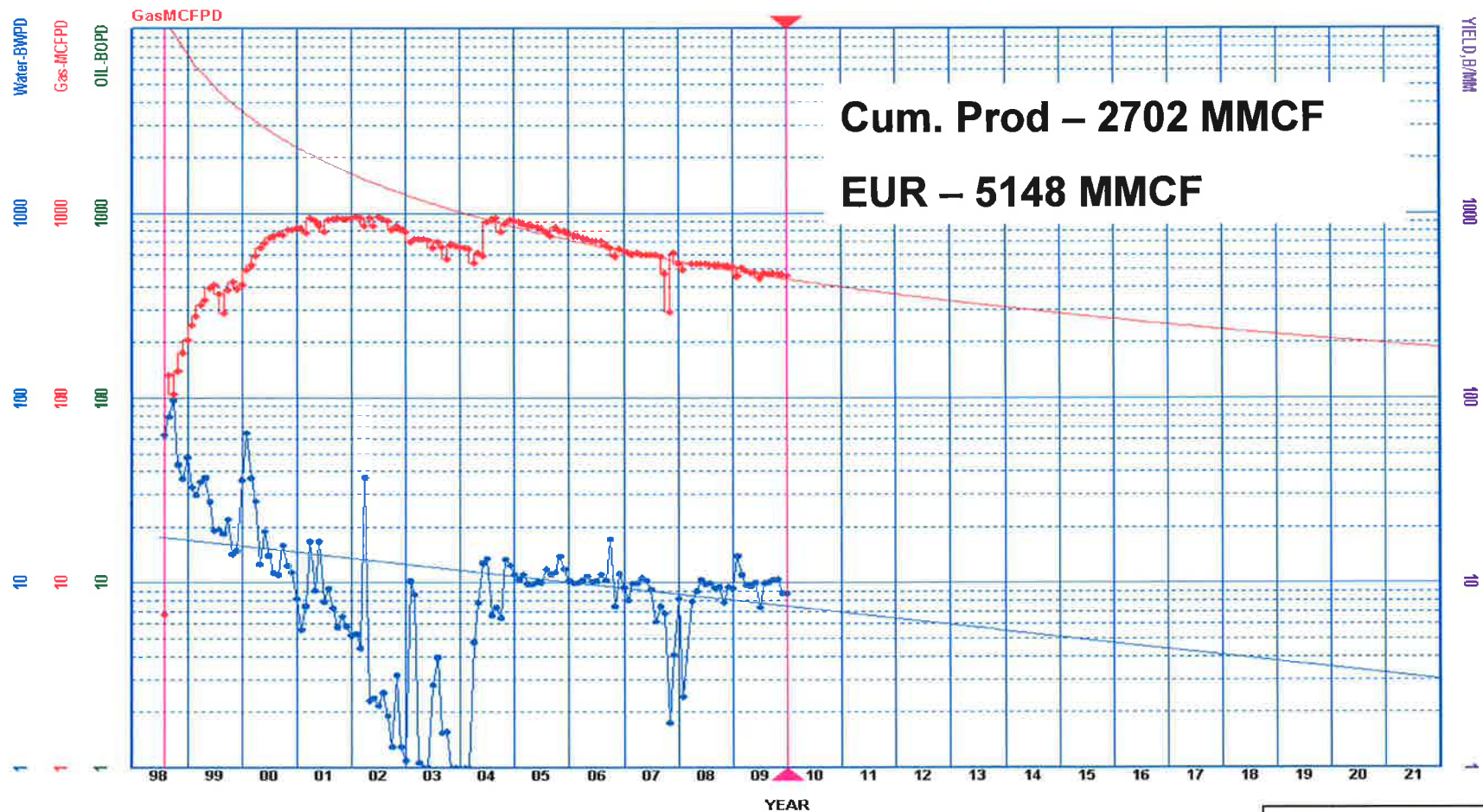
Docket No. 2010-012  
 Cause No. 241-01A  
 Exhibit P3



# VEA A-3

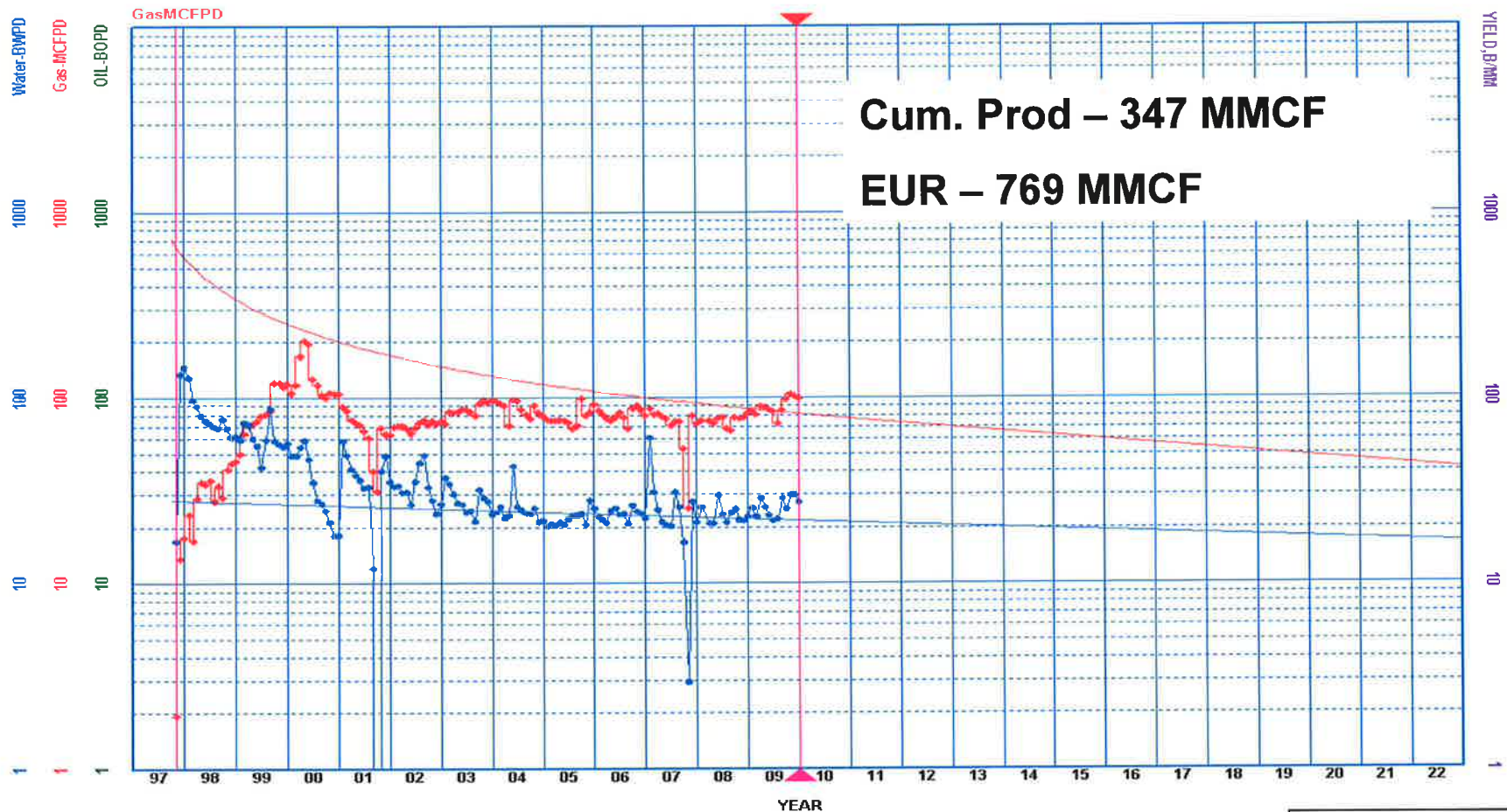


# VEA A-4

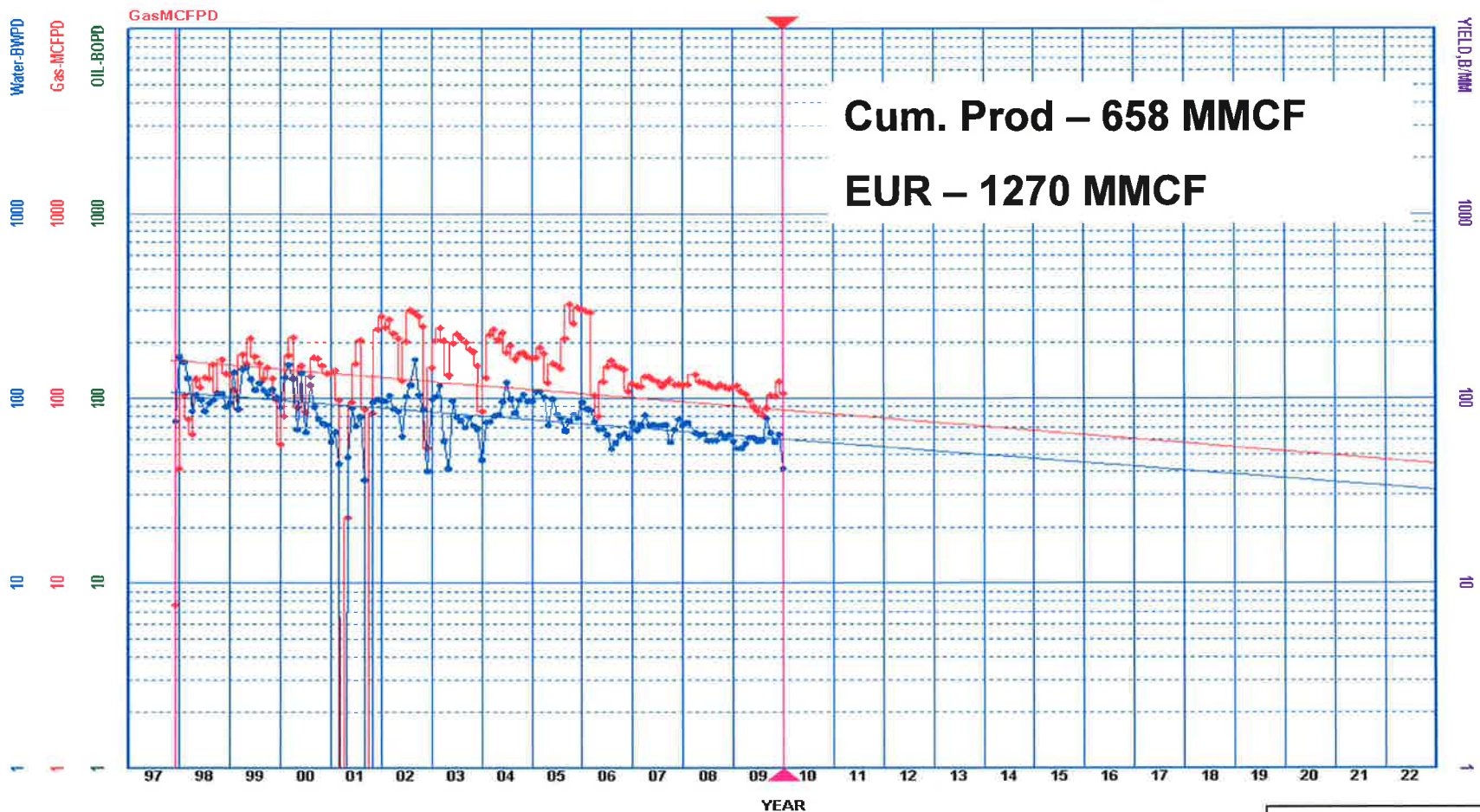




# Helper State A-8

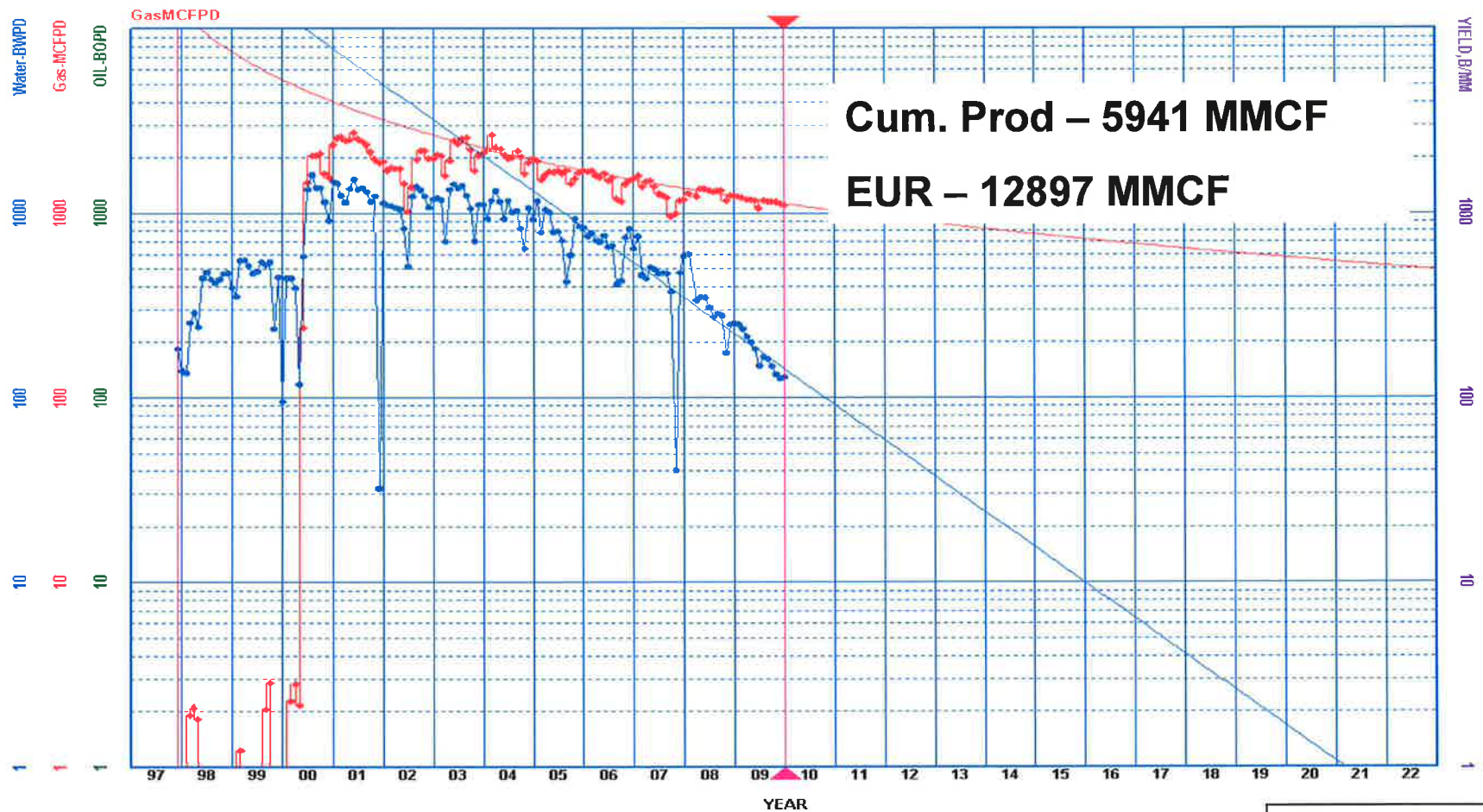


# Helper State A-3



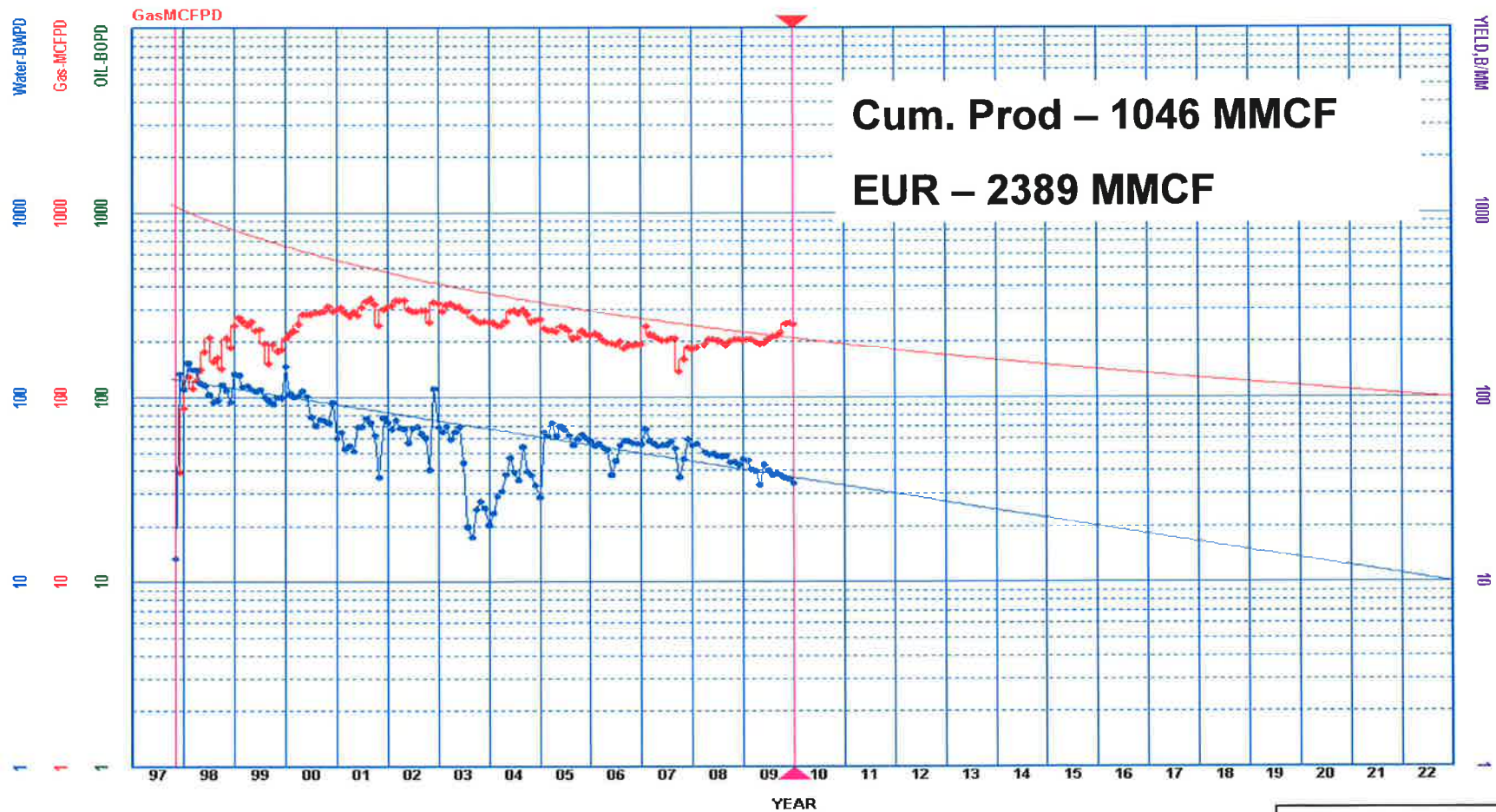


# Helper State A-4



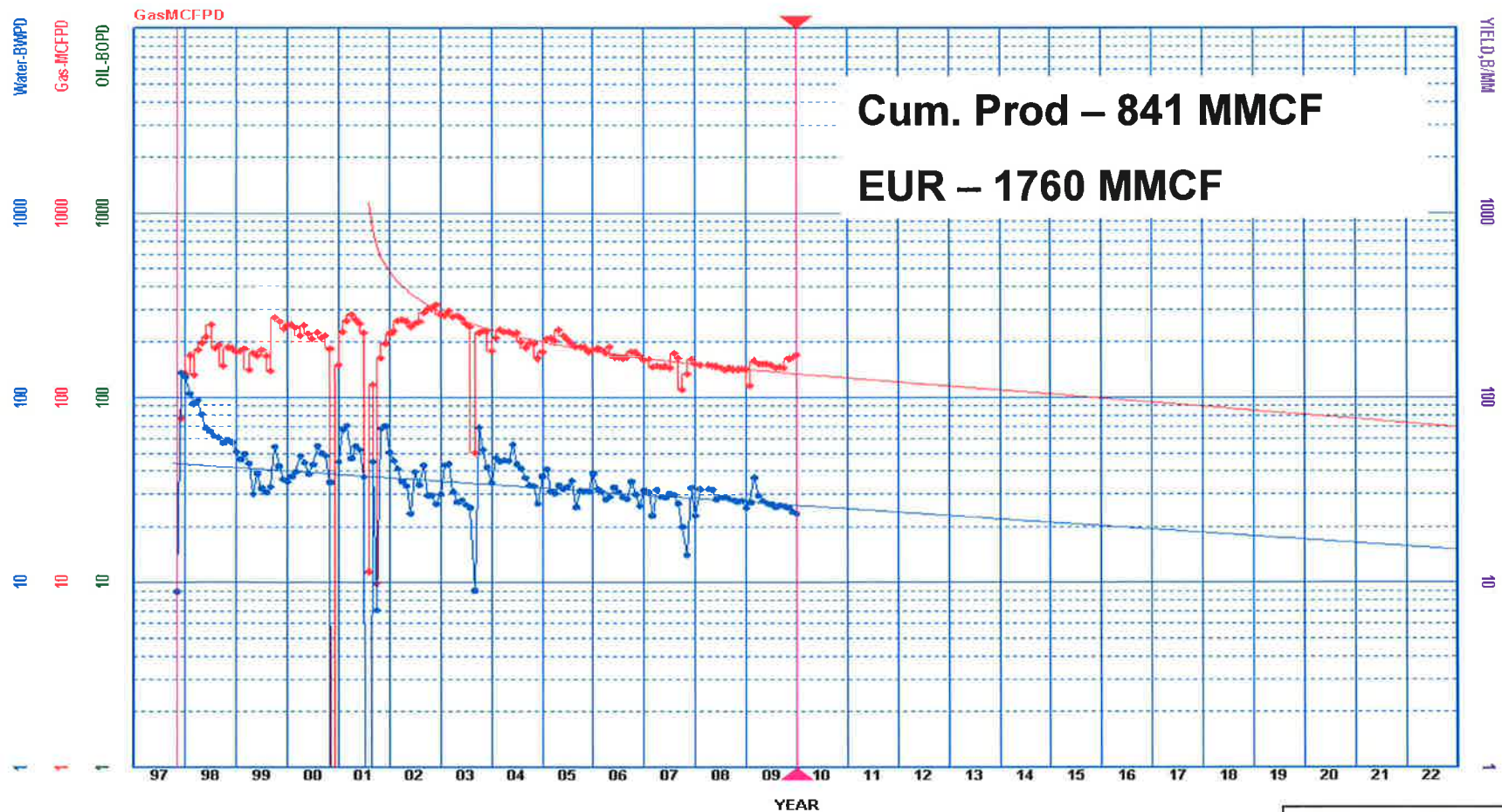
Docket No. 2010-012  
Cause No. 241-01A  
Exhibit P8

# Helper State A-7

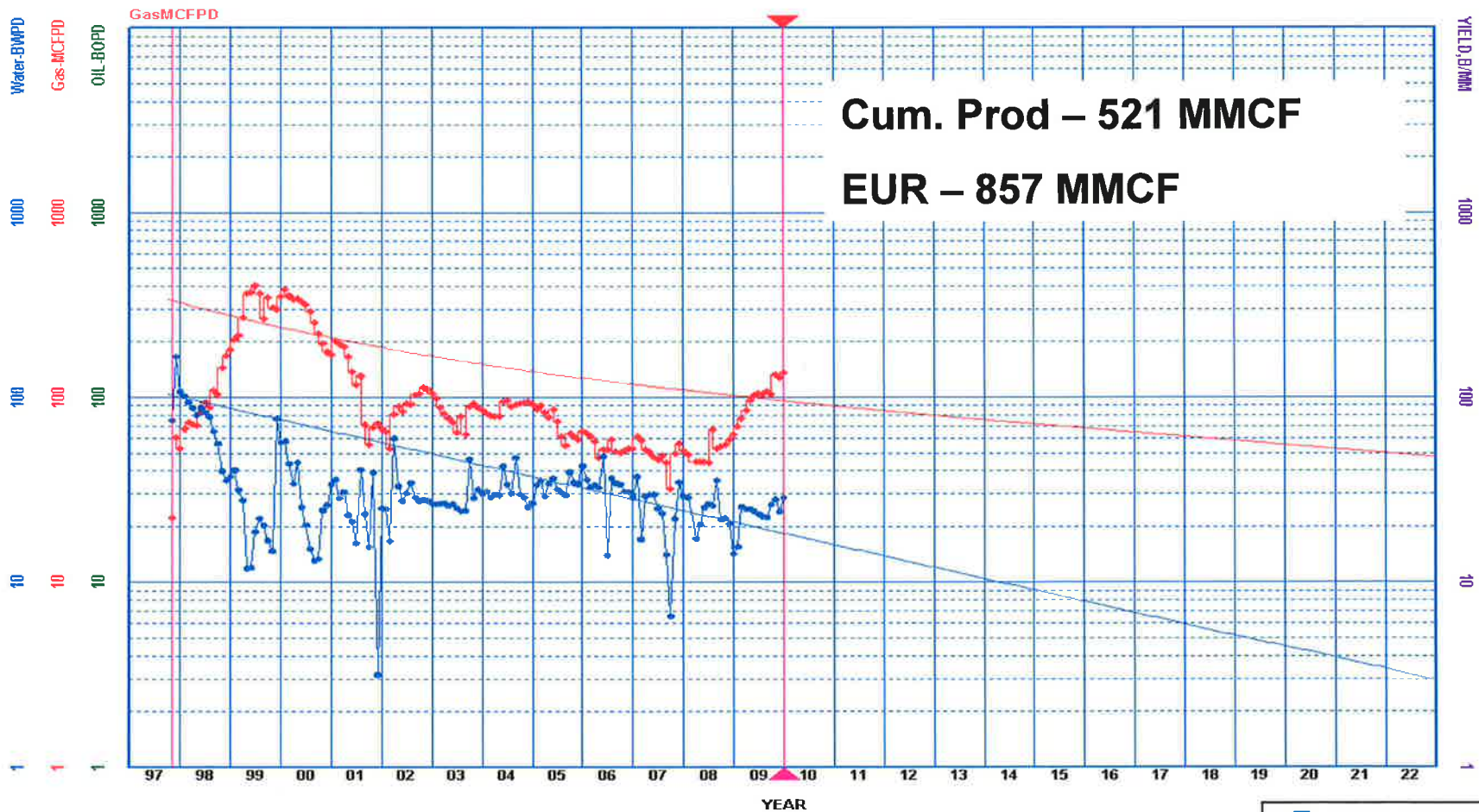




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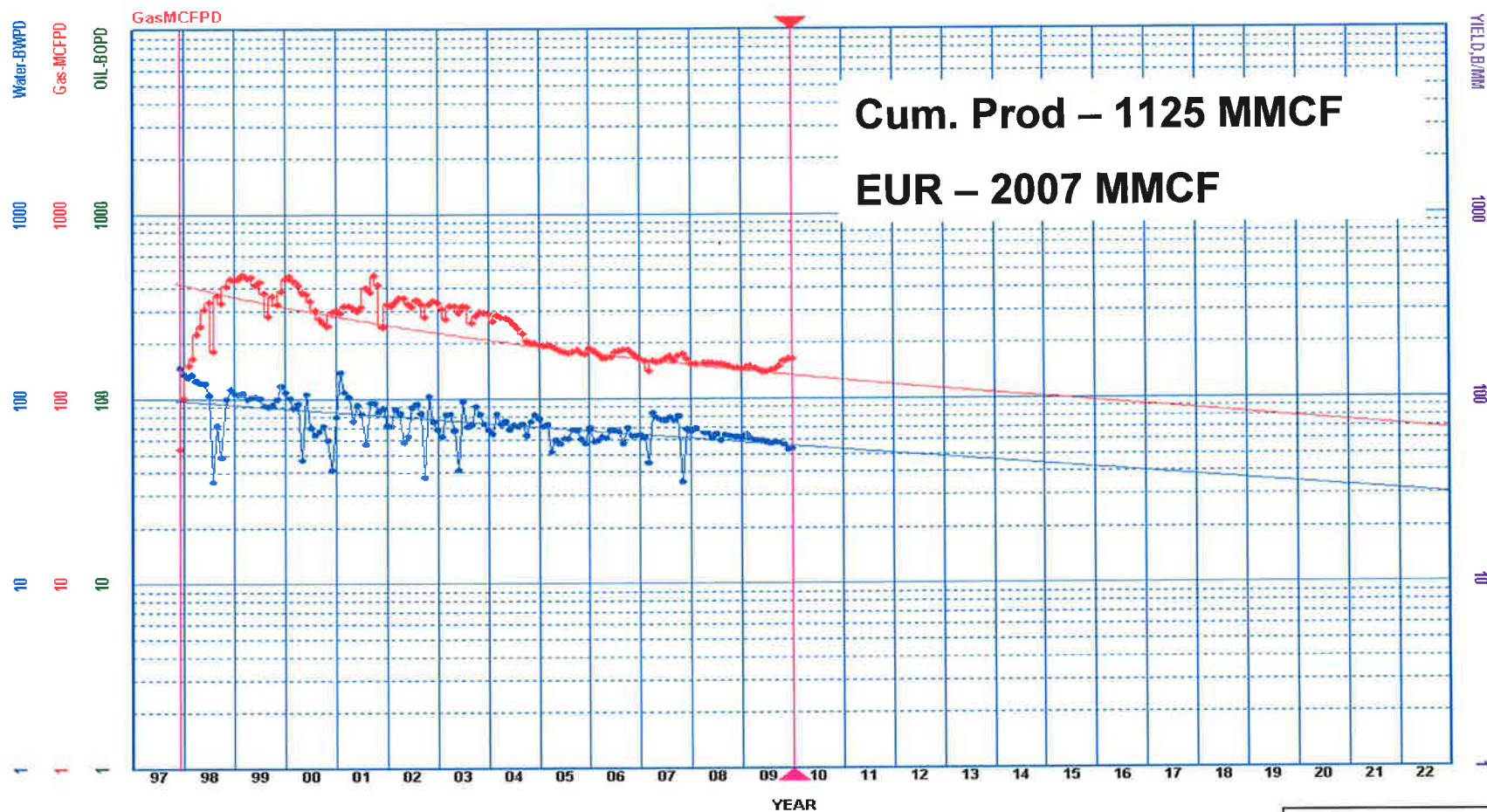


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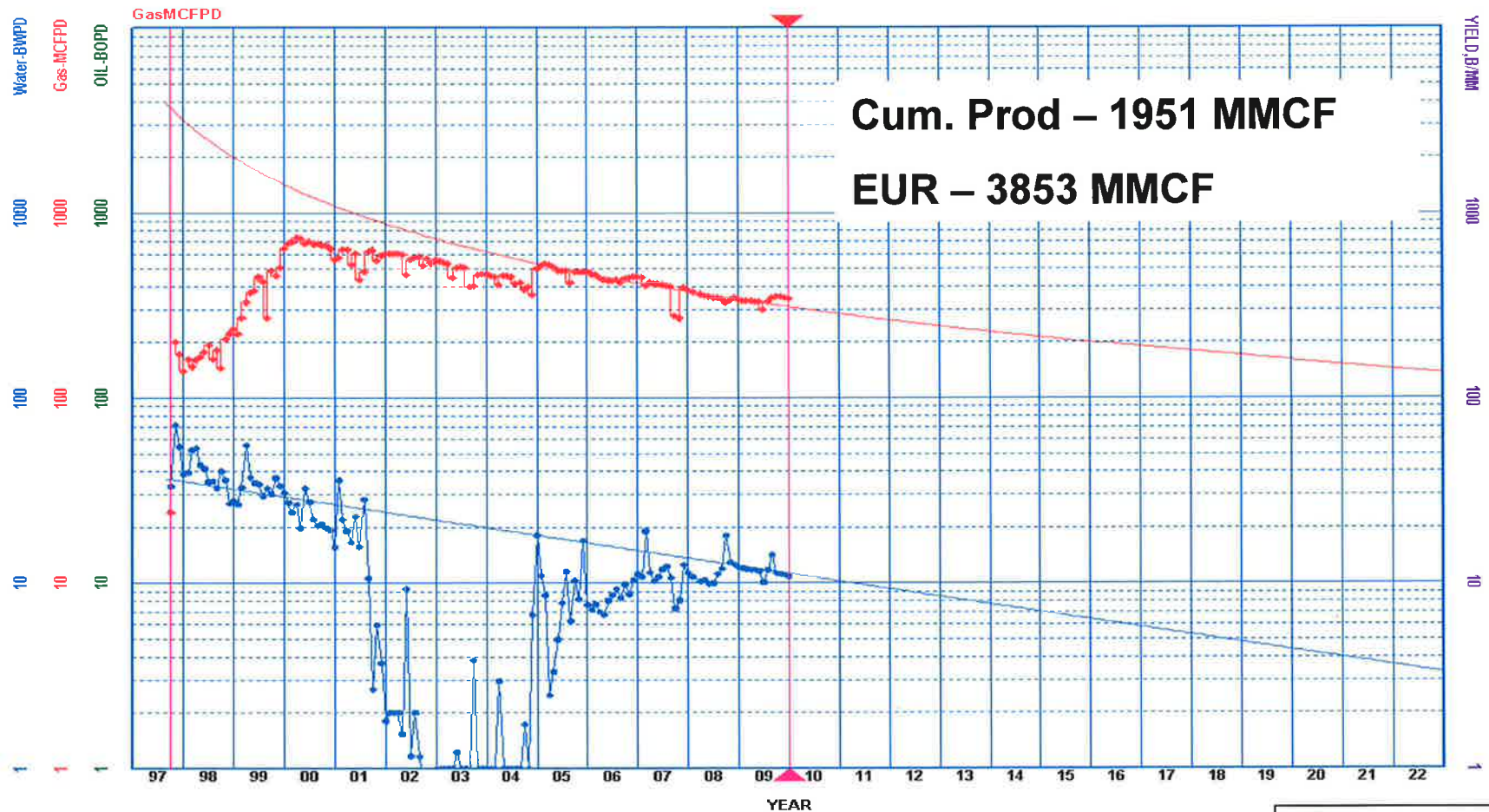




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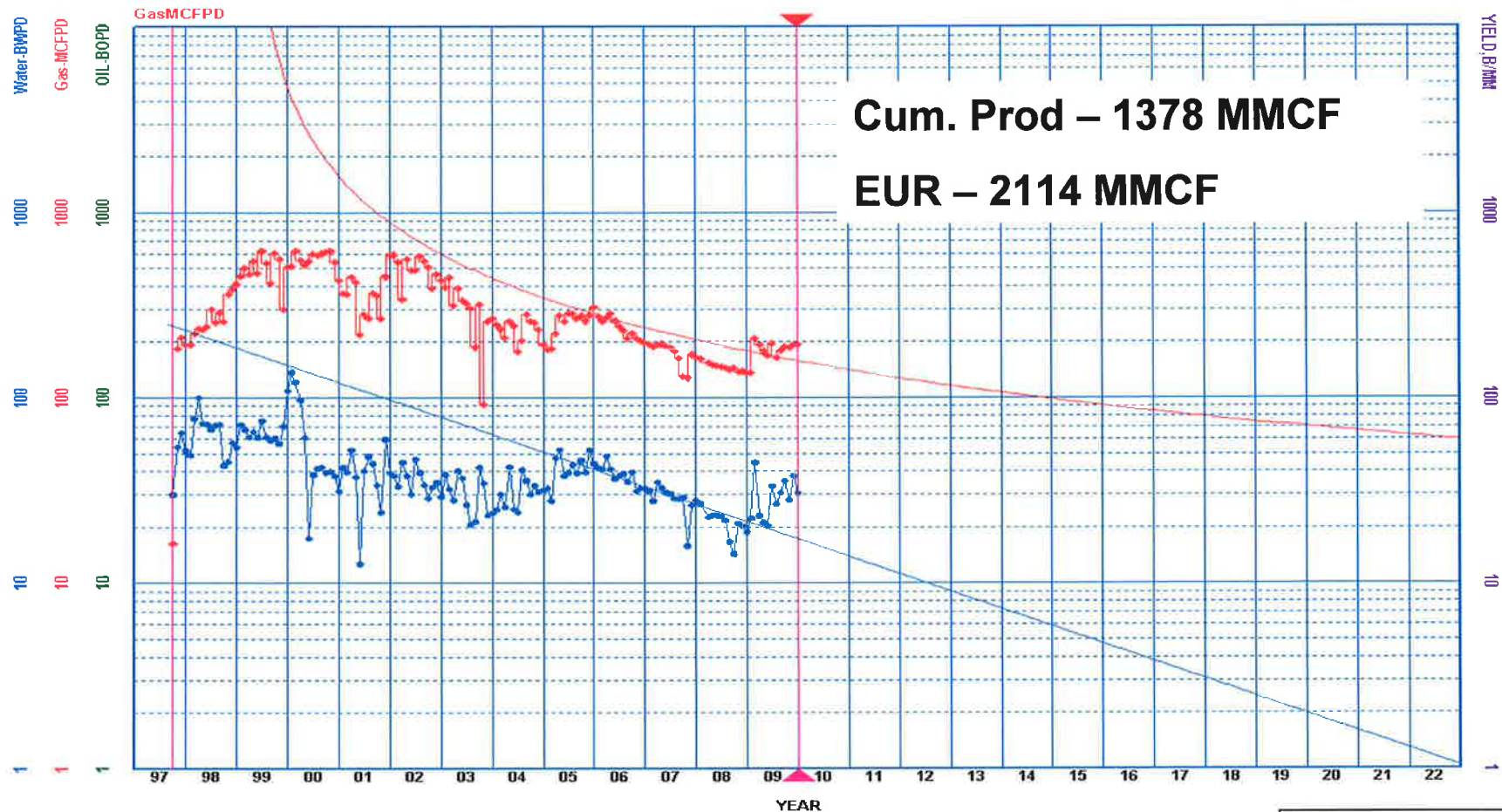


# Helper State D-4



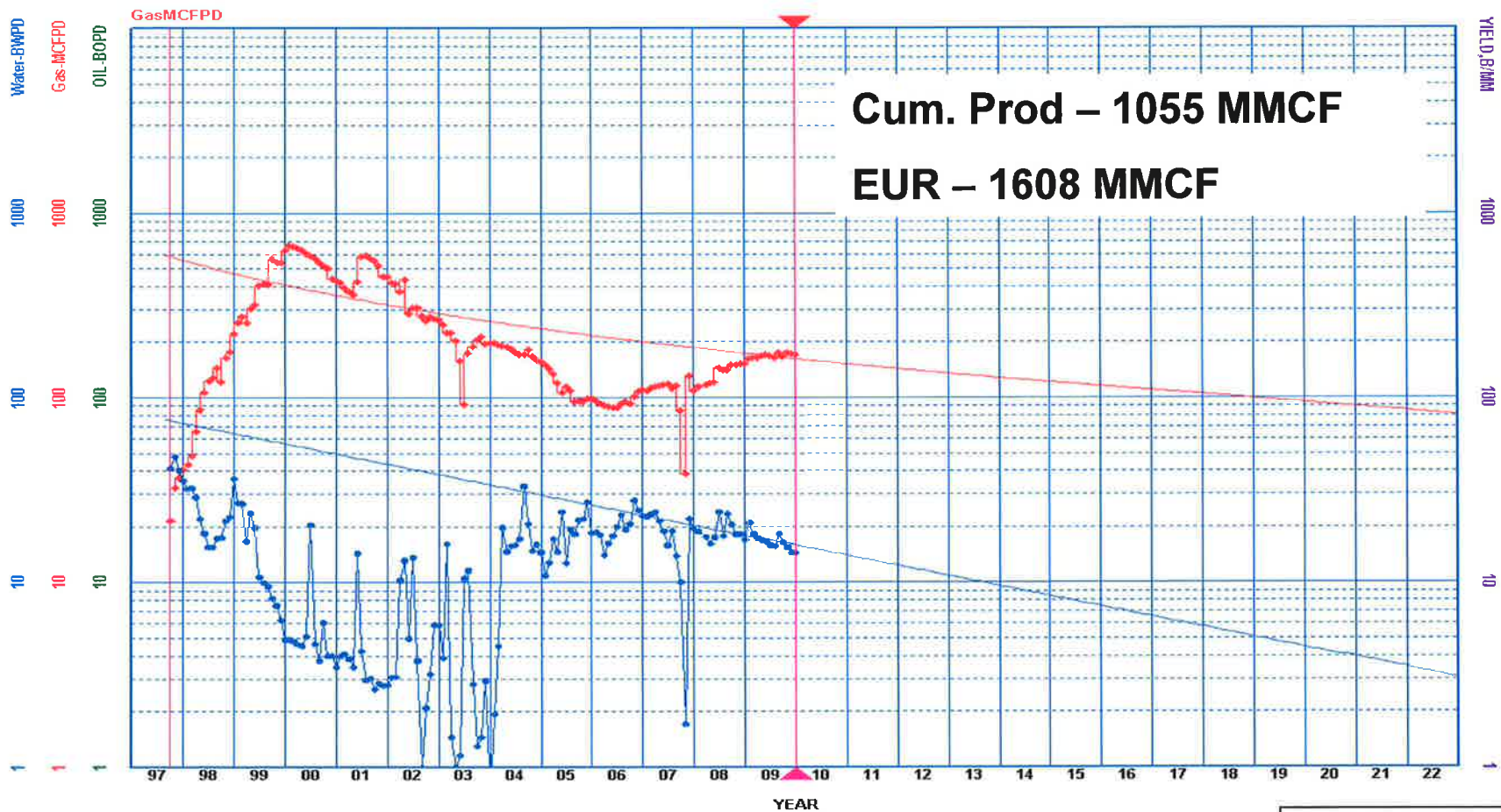


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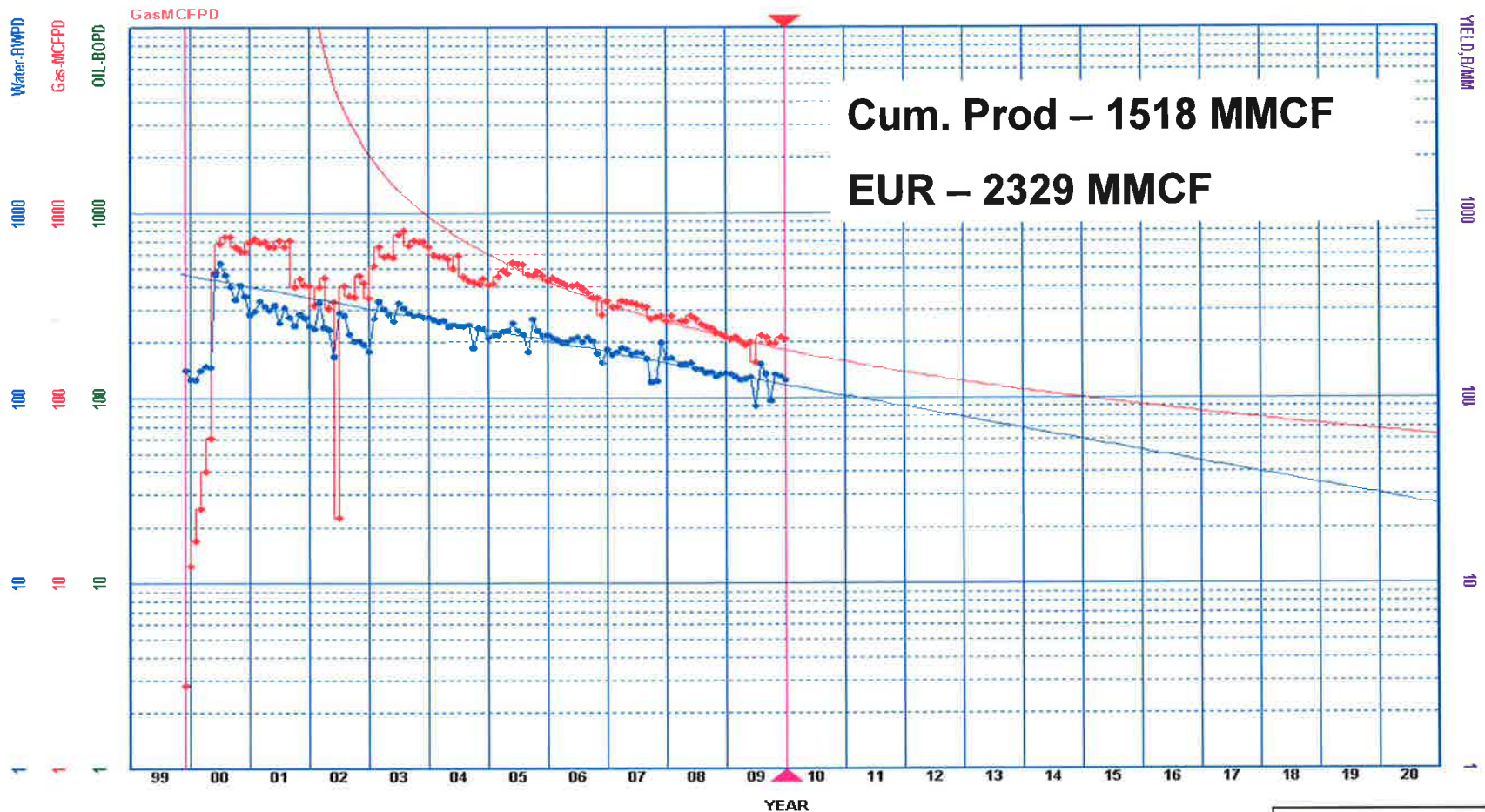




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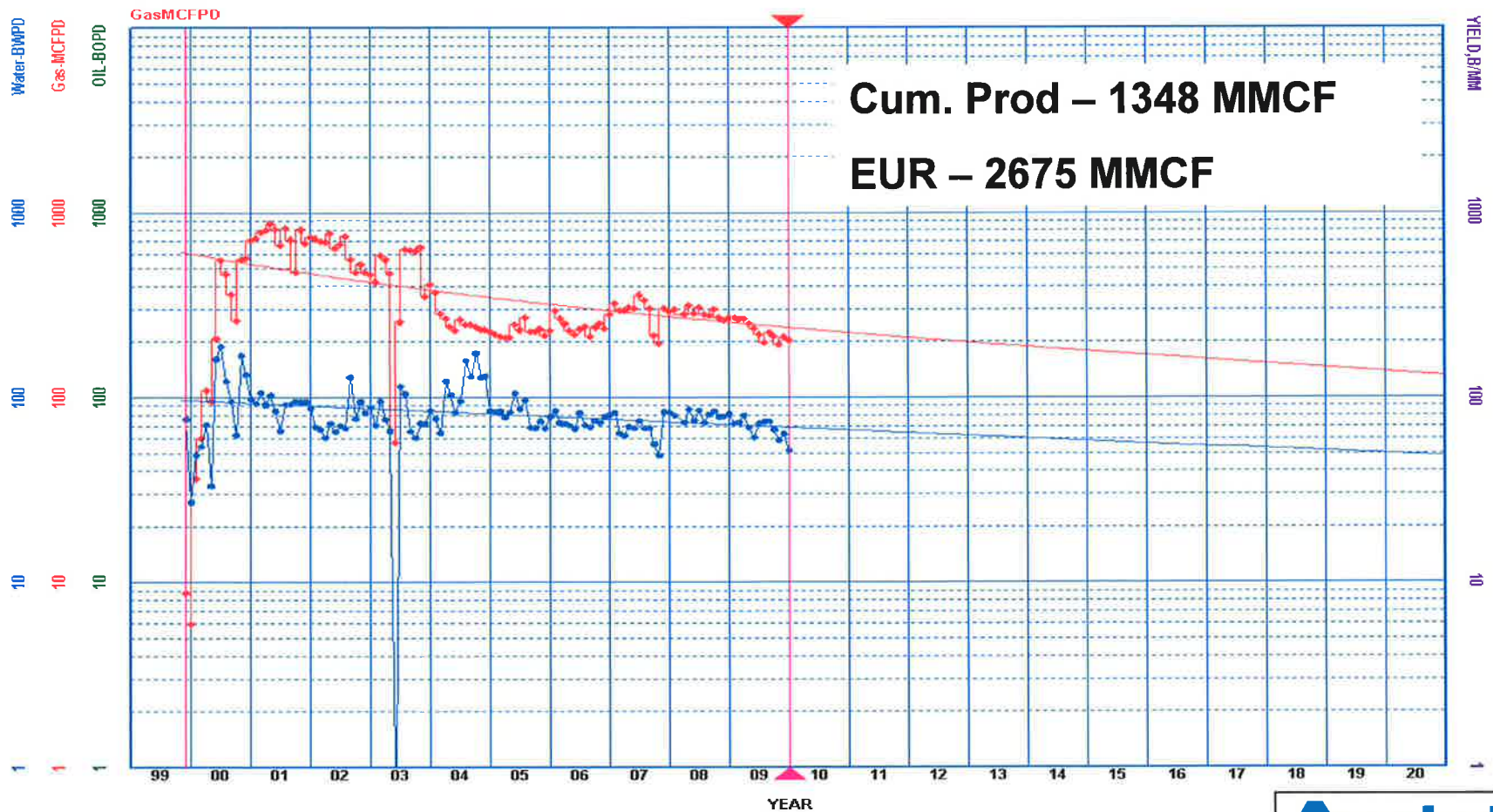


# Helper State E-1





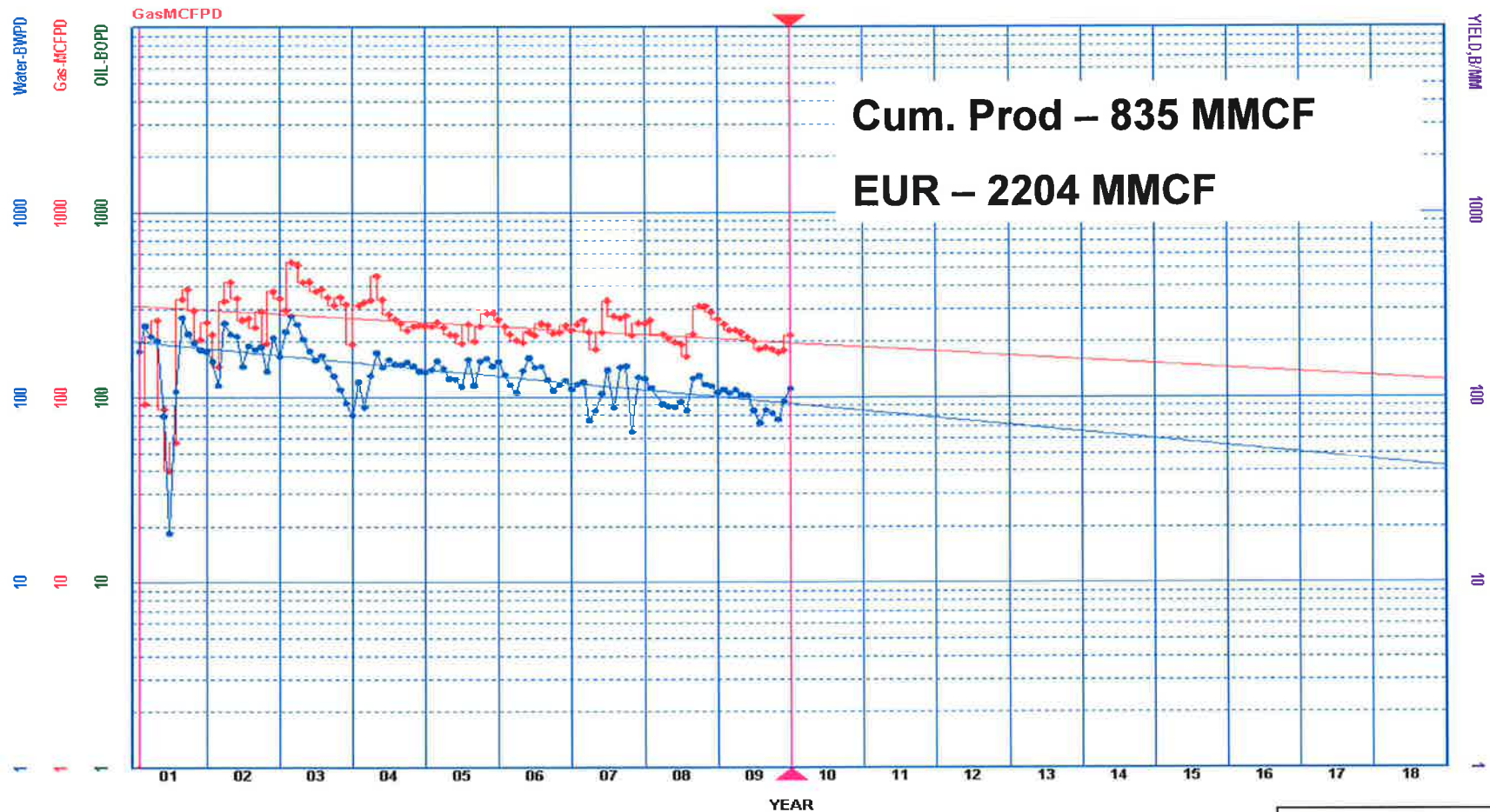
# Helper State E-2



**Anadarko**  
Petroleum Corporation

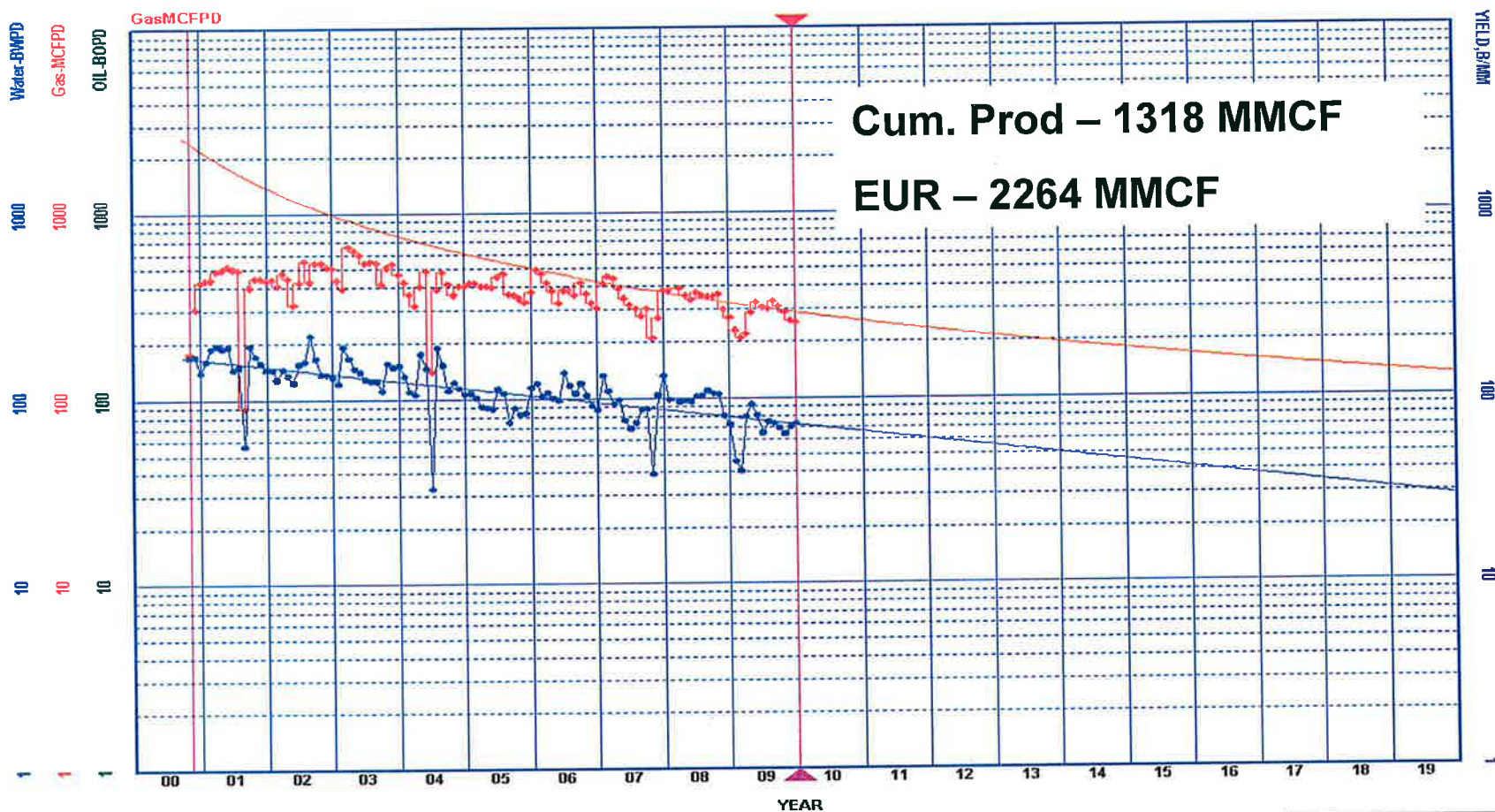
Docket No. 2010-012  
Cause No. 241-01A  
Exhibit P17

# Helper State E-3





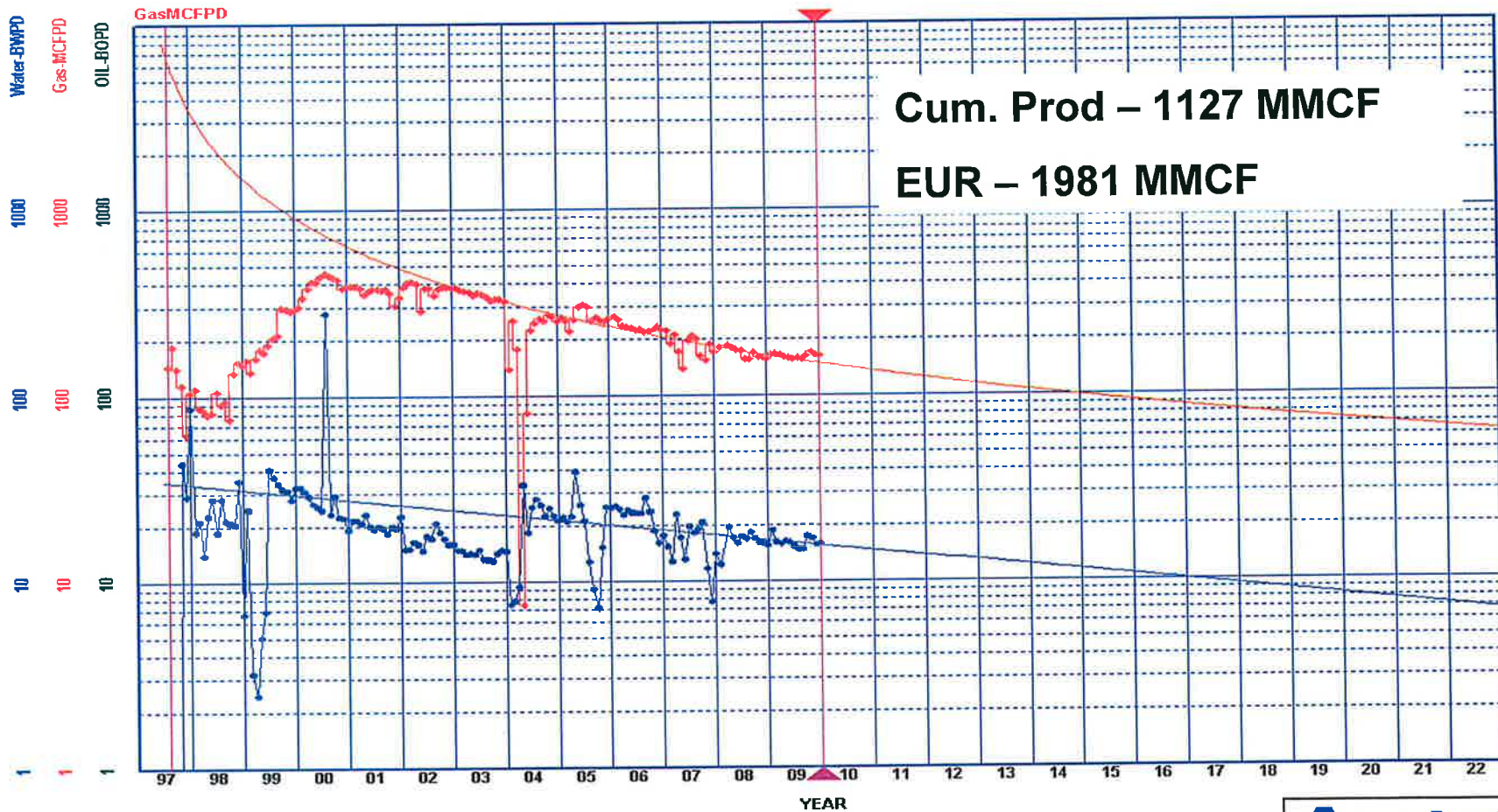
# Helper State E-4



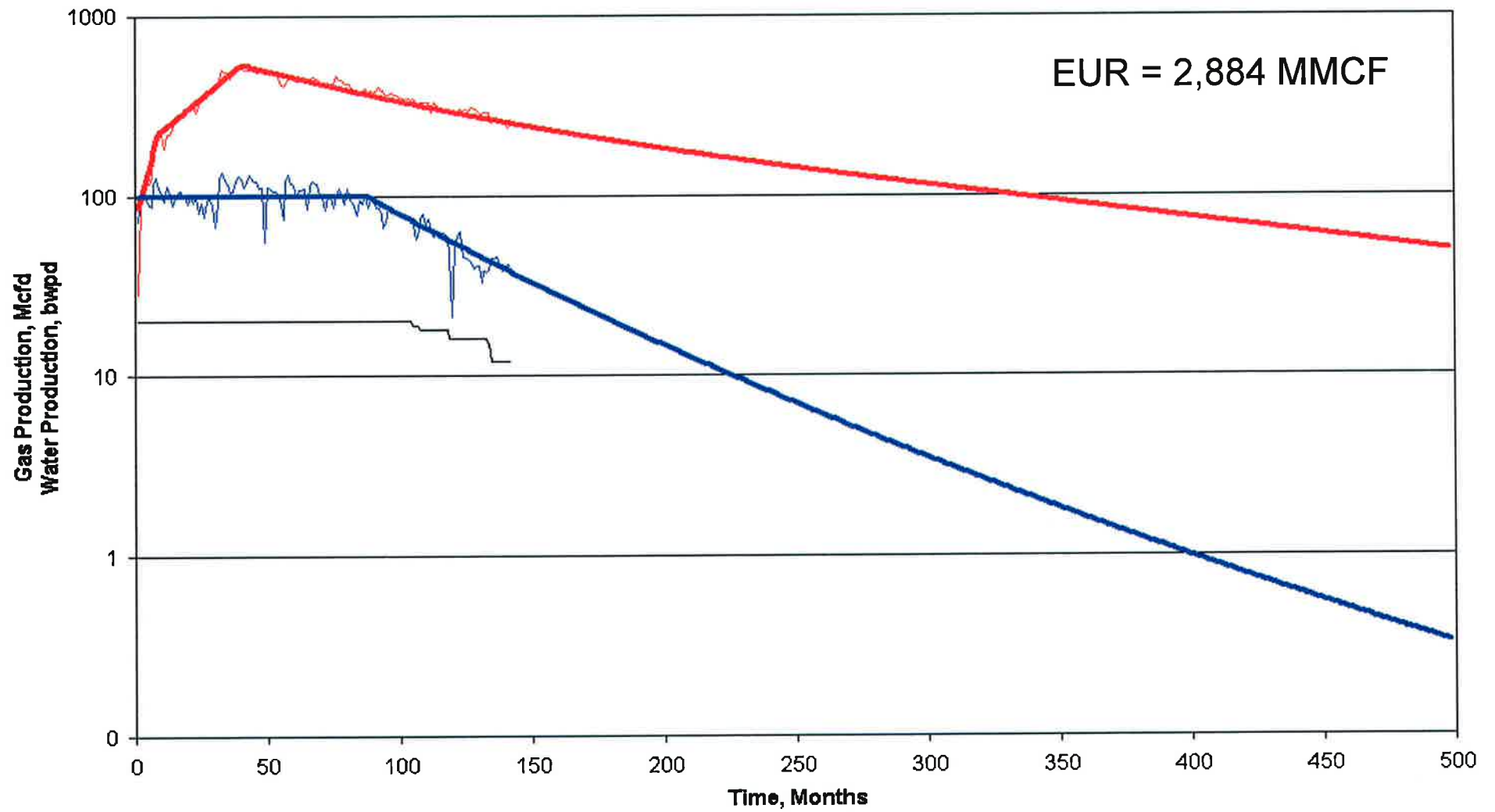
Docket No. 2010-012  
Cause No. 241-01A  
Exhibit PM



# Helper State A-1



# Helper Infill Type Well



— Normalized Gas Production 
 — Normalized Water Production 
 — Well Count - Data Control 
 — Gas Type Well 
 — Water Type Well



Docket No. 2010-012  
 Cause No. 241-01A  
 Exhibit Q

# Helper Field Infill Drilling Pilot Area

## Economic Analysis

- Well Investment, M\$ 650
- Reserves, MMcf 2,884
- Wellhead Gas Price, \$/Mcf \$3.45
- Rate of Return on Investment 49.2%
- Net Present Value @ 10% \$1,232,000

# Helper Field Infill Drilling Pilot Area

## Minimum Analysis

- Well Investment, M\$ 650
- Reserves, MMcf 949
- Wellhead Gas Price, \$/Mcf \$3.45
- Rate of Return on Investment 10%
- Net Present Value @ 10% \$0